

UNITISED WITH PROFITS – GAMALIEL’S ADVICE

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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 calls 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.

1.2.2 The way in which benefit is calculated for UWP is in contrast to that for 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 the valuation of conventional with-profits contracts.

1.4 Joint Working Party

1.4.1 The Institute and 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 and bases. The results of the survey were published on 26 April 1993 and were subsequently discussed at a Current Issues in Life Assurance Convention held on 22 June 1993.

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, at least in part, to 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)(e) 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 United Kingdom 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 perform-

ance. 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 UWP 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 I.

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 had 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 or 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.

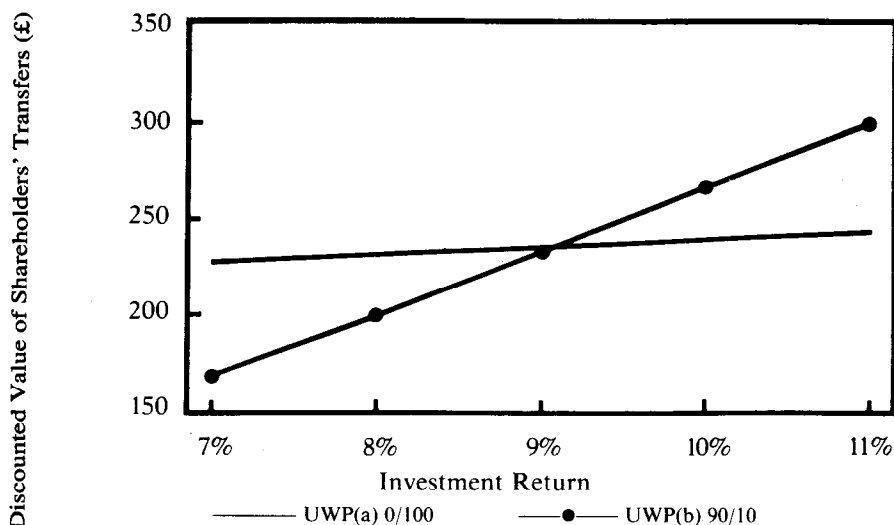


Figure 1. Value to shareholders at 12% Risk Discount Rate.
Effect of change in investment return.

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 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.

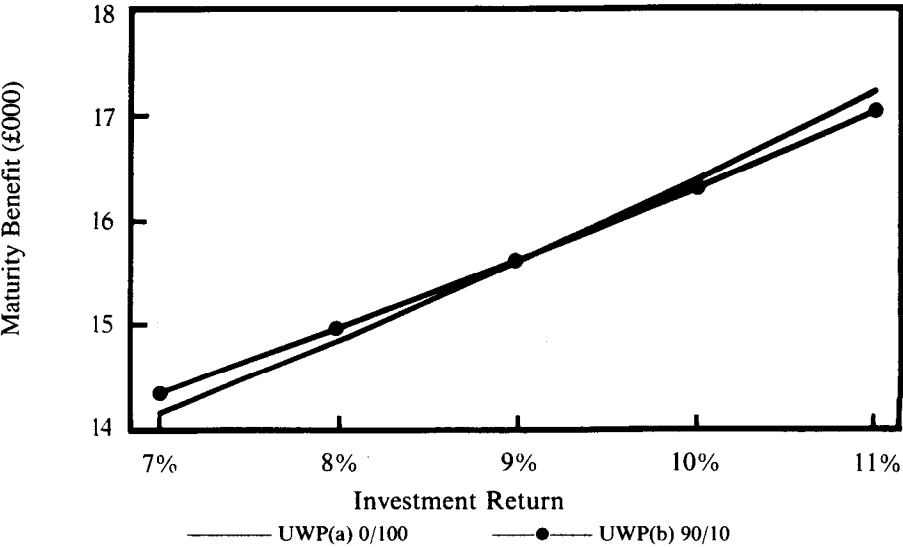


Figure 2. Policyholder's benefit.
Effect of change in investment return.

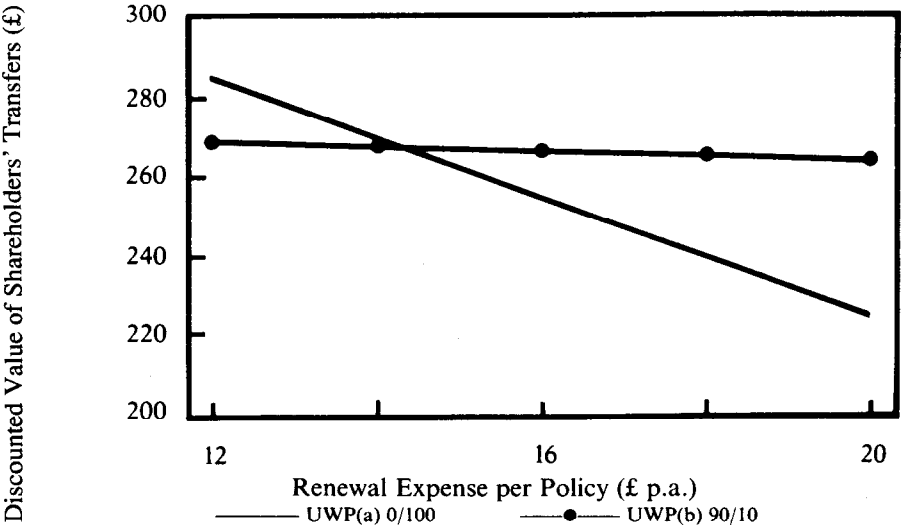


Figure 3. Value to shareholders at 12% Risk Discount Rate.
Effect of change in renewal expense levels.

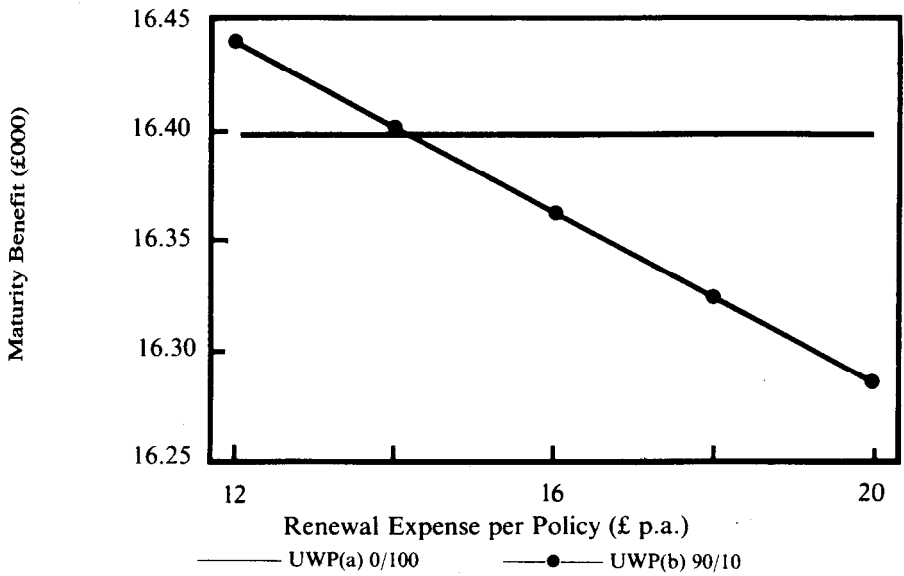


Figure 4. Policyholder's benefit.
Effect of change in renewal expense levels.

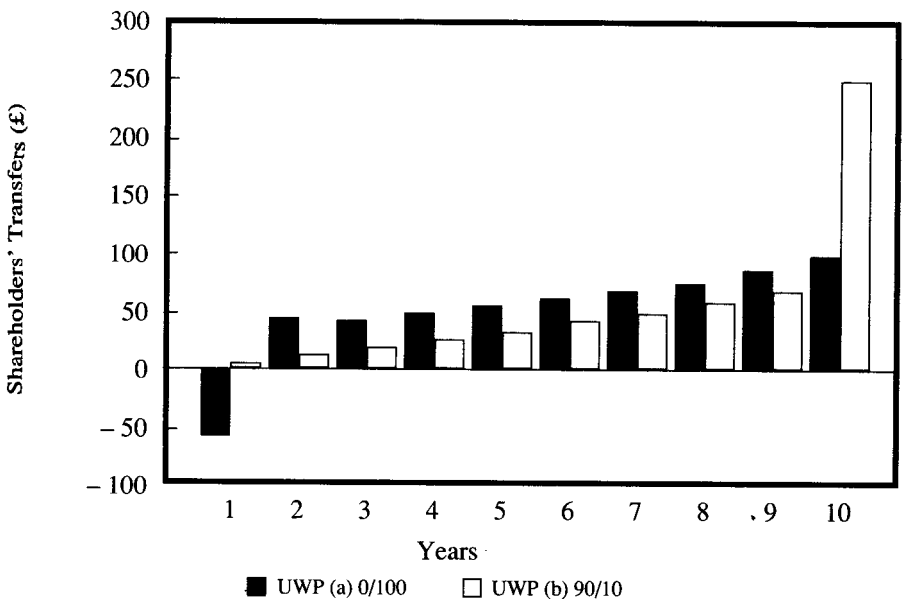


Figure 5. Shareholders' transfers.

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 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 contract’s 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 then 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 takes place.

3.5 *Capital Requirements*

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*

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 consider the consequences. The requirements of the regulations and other valuation issues are discussed in Section 5.

3.7 *Investment Philosophy*

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 | – high volume, low premium,
– high persistency,
– simplified sales process,
– limited systems requirement, and
– emphasis on regular premium payable. |
| Bancassurer | – 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 | – low volume, high premium,
– complex sales process,
– extensive systems requirement, and |

- | | |
|----------------------------|--|
| Unit-Linked Office (cont.) | – emphasis on current value of premiums invested and 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 bancassurers, ‘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 bancassurer, 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 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 of 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.

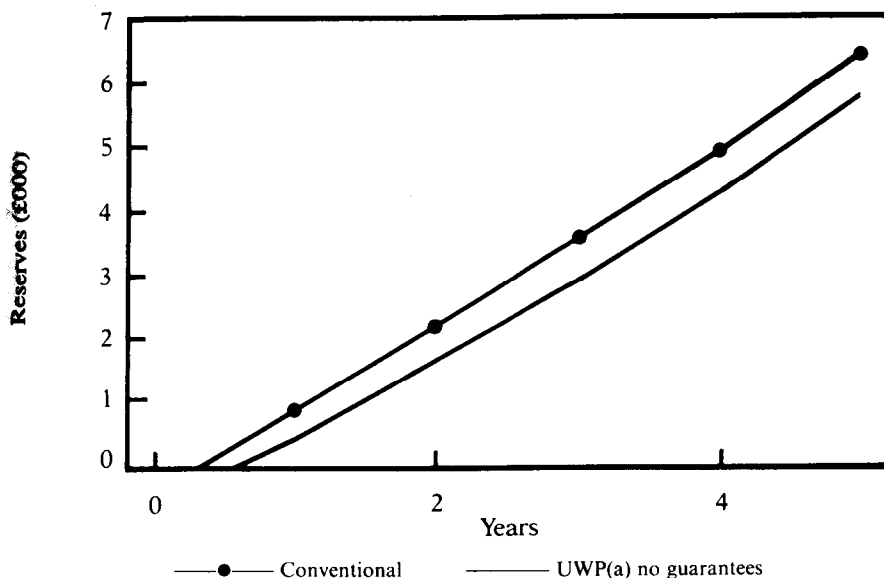


Figure 6. Reserves.

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 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

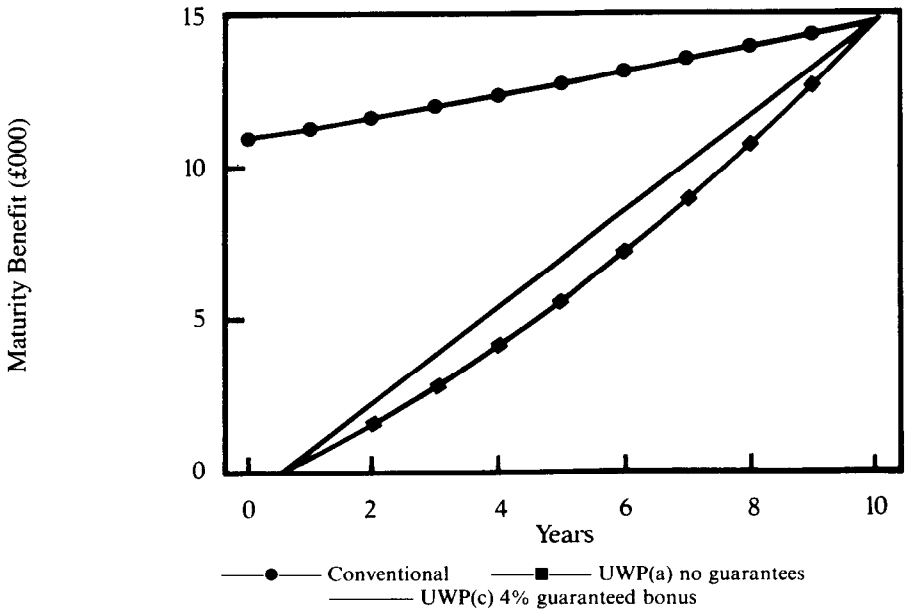


Figure 7. Guaranteed maturity benefit.

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.

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. Offices using the value of UWP units may well have checked to see that the value was at least as great as that which would have resulted from using a prospective valuation method.

5.2.4 *Valuation rates of interest*

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 particular effect if there are capital units to be valued.

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

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)*

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*

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*

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

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 Faculty 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 prove to be high market levels, there will be an adverse effect on 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.

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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 and Table A.5) UWP (b) – 8% non-guaranteed (7% for Figure 5 and Table A.5) UWP (c) – 4% guaranteed – 4% non-guaranteed
Nil allocation period	7 months
Allocation %	100
Bid/offer spread	5%
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 Return**

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

DISCUSSION

The President - The purpose of this evening's meeting is to discuss the paper "Unitised With Profits - Gamaliel's Advice" by Mr John O'Neill and Mr Howard Froggatt, two Fellows of the Institute who have kindly ventured to the northern lands to present their paper to us. I understand that Mr O'Neill is going to present an outline of the paper and that, after the discussion, Mr Froggatt will reply on behalf of the authors. I invite Mr O'Neill to introduce his paper.

Mr J. E. O'Neill MA FIA (introducing the paper) - We are delighted to have the opportunity of presenting our paper to the Faculty this evening and, by way of introduction, I would like to cover three aspects of unitised with profits (UWP) business.

The first is to put the original paper into context by summarising our reasons for writing it, which then leads on to how the paper is structured. The second is to comment on some more recent developments and the third to highlight some topics that we think may be of particular concern to the profession.

First then, "Why was the paper written?" We were interested in the subject so that might have been sufficient reason, but there is a particular curiosity of UWP business in that it appears to buck a number of trends. Following the high stockmarket levels in the late 1980s and the pensions business explosion, there appeared to be, to our view anyway, little life insurance product development - except in the area of UWP. Recent years have seen new business life volumes in many areas at best maintained, but there is one prominent exception - UWP. So we asked the question, "Why do companies enter this market?" Our interest was increased on discovering a new reason for entry with each new market entrant.

And so to the structure of the paper. Our first heading was one of observation and here we attempted to set out our understanding of the with-profits concept and of how UWP has evolved or departed from some basic tenets. We then listed and commented on the main reasons for market entry. This is the background to subsequent discussions on corporate and actuarial issues.

We considered corporate issues and here we dealt with the relative interest of shareholders and policyholders. We discussed how these might be reconciled by adopting different fund structures in different offices. We then went on to consider pricing and product development and looked at some features that were common to UWP designs and at their relative importance in different markets. Our next topic was the rôle of the valuation actuary and reserving issues and here we outlined a range of valuation methods, reserving issues (including statutory requirements) and policyholders' reasonable expectations (PRE).

Having covered the ground in this way, we brought together our views in the final section which is on managing the UWP policyholder and there are a number of UWP issues where the actuary has a clear contribution to make to this dialogue between the policyholder and the office. So that was the paper.

The second area I want to comment on is recent developments. UWP has moved on and there is, for example, more data on industry practice now available. The main development was the publication of the LAJC survey on UWP provision and this recognises, as many commentators do, the rapid growth in the volume of this business with estimates including figures of 17% and, elsewhere, 25% of with profits funds under management being derived from UWP contracts. The survey results indicate a number of areas of both considerable interest and possible concern. An example is switching options for life as well as for pension plans.

The third set of comments are on areas that we would like to highlight for the profession as a whole. The first is UWP bond business. It is now established practice for with profits offices to issue this class of contract. For actuaries, this introduces not only a higher profile in terms of managing the bonus rate and use of market value adjustment factors, but also much more dynamic management of distribution issues generally. If that is one area of concern, a second is disclosure and no discussion of the life assurance market escapes from the shadow of Treasury statements on disclosure and here UWP with the market value adjustor (MVA) must be included.

That summarises recent developments and thoughts on some issues for the profession as a whole. The question as authors that we would see now is "What is going to happen next?". We look forward to hearing your views on the subject.

Dr R. Ransome (opening the discussion). I wish to thank the authors for providing us with the opportunity to discuss a subject which, although still relatively new, is already of considerable importance to us all. Over the last two years or so, sales of UWP bonds have averaged £2.5 billion per annum in respect of roughly 150,000 policies per year. This is a significant market in which the IFAs provide nearly two-thirds of the business and where sales are supply constrained. UWP pensions business is also substantial. Overall, UWP reserves account for over 20% of the total with profits reserves in the U.K.

So what is the attraction of the UWP to the policyholders or, perhaps more importantly, to the sales intermediary? I would suggest that it is trying to have the best of both worlds. Leaving aside the issue of the nature of the liabilities and the guarantees at this stage, if a life office uses the same investment team to manage its investment linked funds as well as its non-linked assets, should there really be any significant difference between the investment performance of its non-linked funds and those of its linked managed funds? I think not.

In the last bull market there was no need for UWP nor, for that matter, deposit administration nor building society accounts. A mixed fund investment would do better but this is not so when markets flatten or fall. Then the cry is "Where has the money gone?".

UWP is an attractive way of protecting a personal pension fund close to retirement. It avoids having to remember to switch between funds. It can be done once and forgotten about, that is until retirement. A MVA is not so sensitive an issue for a pensions contract provided it does not apply at retirement. It is not particularly sensitive for the insurer either as retirement dates are usually well distributed. However, this is not so for the with-profits bonds.

The best selling bonds are those which have specific times when a MVA will not apply. As bonds tend to be on offer for limited periods, this means the amount at risk of disinvestment at these option dates can be large. Bonds are purely investment vehicles so if markets are depressed at the option date the best advice is to switch or surrender and make a killing. The insurer will pay at the expense of other with-profits policyholders.

If, for sound marketing reasons, we only apply a MVA infrequently or never, it would certainly come as a nasty shock to the policyholder if we were to apply one when markets suddenly fall. Even if the policyholder's expectation is unreasonable, I doubt whether we could always apply a MVA to with profit bond business. We would be unlikely to sell any or, indeed, sell as much. I think that we would be better served by adopting the building society approach of having to give a month's notice to avoid a lower return upon disinvestment. There could, of course, be a proviso that if markets fall by $x\%$, there will be a MVA of $y\%$ anyway except upon death or maturity and the circumstances where this will happen would be described exactly in the product literature.

We are storing up trouble for ourselves by not defining in the contract the circumstances when a MVA will or will not apply. I say "will" and not "may" deliberately. Particularly for a single premium bond, where bonuses are reflected in the unit price, an informed investor could monitor the UWP price against that of a mixed fund. If the mixed fund did better he might possibly expect a terminal bonus, but if it did worse should he expect the MVA to bring the performance of the two funds into line? This is the logic of the asset share approach but by not following the logic there is cross-subsidy between different groups of policyholders to the detriment of some.

I do believe that asset shares are of fundamental importance. At the very least, specific types of assets must be hypothecated to the various types of UWP and other contracts. I am not advocating the operation of a separate with profits fund, but matching the assets in this broad way is essential to check whether guarantees on UWP contracts are being provided from income or capital and also to aid the determination of suitable bonus rates. An office should be able to meet any guaranteed rate of return out of income from these broadly matched assets. Else I would suggest that the guarantee is too high and provision should then be made for this in the valuation. Investment freedom is also constrained by the availability of option dates where a MVA does not apply upon surrender. It may require active management of a portfolio or, perhaps, the use of options to reduce the potential risk of disadvantageous disinvestment.

I would now like to look further at Section 5 of the paper on reserving issues. At first, I had some difficulty in understanding what Figure 7 really meant until I realised that it is not a comparison of like with like. This is because the UWP contracts reflect the paid-up policy position in any year whereas the conventional contract assumes premiums will be paid throughout the term. I feel that it would have been better to show PUPs for

the conventional with profit contract. (I am assuming that I understand the contracts correctly in that the minimum sum assured under the UWP applies only on death.) However, Figure 7 does illustrate very well the likely position a policyholder might surmise by studying the product documentation. This cannot be in anybody's interest.

In Figure 6, the differences between UWP and conventional reserves are somewhat extreme. The conventional reserves shown utilise a rate of interest much lower than those used by the principal with profits offices at the end of 1992 although that may not prove to be true at the end of this year. A better contract for comparison would perhaps have been a conventional low cost endowment where, again, there is not the same sort of guarantee at maturity, but I would still expect the UWP reserve to be lower. I think one can argue that the conventional contract has a higher valuation standard than that used by offices as at the end of 1992, but I am not sure it is right to say that UWP standards are lower in the authors' example solely because they lack guarantees. The reserves may well be lower because no guarantees have to be valued but otherwise the standards adopted may conceivably be the same.

Until a short while ago, I thought that the 1982 Insurance Companies Act implied UWP contracts were non linked, agreeing with the interpretation in Section 5.2.2.1, even when a policy invested in both UWP and linked units. I am now not so sure when I consider the case of an insurance company which provides UWP by fully reinsuring the UWP benefits with another office.

I believe that a sound approach to reserving can be achieved by setting up reserves for UWP equal to the value of units plus expenses, mortality and guaranteed reserves assessed using the linked valuation approach. Because mortality reserves are held separately, the value of the units may be considered as the PUP under the contract increased by the guaranteed growth rate and discounted using a valuation rate of interest equal to the guaranteed growth rate. This is essentially a net premium valuation if bonuses are not guaranteed. Normal constraints on the valuation rate of interest would apply. If the guaranteed growth rate is too high, additional reserves are necessary. I would argue that normally each future premium increases the benefits provided under the contract so that, by Regulation 57(3)(a), they could be left out of account if they could not already be left out of account by 57(3)(b) as the authors suggest. In essence, UWP reserves based on bid value of units are too low if the guarantees are too large. The same arguments apply to deposit administration contracts. I would think that there is scope for lower reserves than these, provided guarantees are covered. This proviso also extends to option dates where MVA does not apply. Any discounting ought to reflect the potential high surrender rates and the surrender terms at such times. The consequence for the resilience test is that guarantees are onerous. One could logically extend this argument to justify lower reserves than above provided guarantees can be covered and the implied interest rates are in accordance with the regulations. This proviso in my view also extends to include option dates where a MVA is not applied. Any discounting should reflect the potential high surrender rates which may occur at such points in time.

However, I think that determining a valuation basis for UWP is not the real issue. What is necessary is a complete review of the regulations in order to ensure that all types of contract whether conventional, linked or UWP can be valued in a more consistent manner where assumptions are explicit rather than implicit.

Guarantees can be onerous and it is quite right that their presence should make it harder to satisfy the resilience test. I am reminded of the situation some years ago when it was popular to write a 10 year temporary annuity in conjunction with a deferred annuity where the cash option equalled the original capital investment. Large volumes of this business were written. At the 10 year point, interest rates were near an all time high and nearly every policyholder elected to take cash. With the benefit of hindsight, these guarantees might not have been given, but when they are we must, in the reserves we hold, guard against the disinvestment risk, especially where a contract is perceived as largely an investment vehicle.

I would like to close now by thanking the authors once more for allowing us effectively to exercise foresight and for clearly stating the issues. As they say, UWP is here to stay.

Dr D. J. P. Hare I was particularly interested in the quotation which was chosen to be at the head of the paper. It suggested to me that the paper was going to encourage the industry to steer well clear of UWP business but the conclusions in Section 7 show that that was not the case. Certainly there are points made in the paper which did not fill me with great enthusiasm. For example, while offices should not offer switching options into with profit units which they do not have the financial strength to support, the thought of having to hold

a solvency margin of 4% of all unit linked reserves where such options are available would not, I suspect, be greeted with unanimous approval.

The 'key words' at the start of the paper probably provide a better indication of the main issues which need to be considered in respect of this type of business and, if a Biblical quotation had been sought to take account of the impact of policyholders' reasonable expectations, then some verses from the seventh chapter of Matthew's gospel could have been used where Jesus says:

"Which of you, if his son asks for bread, will give him a stone? Or if he asks for a fish, will give him a snake?"

I wonder if policyholders really know what they are buying when they take out a contract investing in with profit units. Have they expectations which have been aroused by substantial maturity payments under traditional endowment contracts, which may not be met from what is, at least in some cases, simply a smoothed managed fund? High bonus declarations in the past have caused with profit units to compare very favourably with deposit-based investments. How will public perception react to bonus rates which might more accurately reflect the running yield on today's underlying assets or will many companies continue to reduce the likelihood of significant terminal bonuses by continuing to declare bonus rates at or near the current levels?

Do policyholders understand what smoothing means? Receiving more than the value of the underlying assets sounds very appealing when investments have performed poorly, but how many policyholders would be happy for with profit units returns to lag behind those of an average managed fund when markets perform strongly? If an alternative biblical quotation is required, then can I offer some more words from the Sermon on the Mount where Jesus remarks that "your Father knows what you need before you ask him".

In the context of smoothed investment returns, I am not sure how many policyholders would pay the same compliment to the life offices with which they invest and, in particular, to the actuaries who are involved in their management.

In their conclusions, the authors state that UWP business is here to stay. While it may be a truism to remark that that remains to be seen, it is certainly the case that such business will be around for many years to come. If as an industry and as a profession we are to avoid, or at least reduce, the risk of bad press and customer dissatisfaction in the future, it is vital that the policyholders have clearly explained to them the nature of what they are buying even if that, in itself, is no mean feat.

Mr D. O. Forfar I should like in my remarks to address purely one question - namely whether, for the same level of guaranteed benefits at the end of the term, UWP or CWP has the lower reserving requirement. The question as to whether CWP or UWP has the lower reserving requirement seems to me to be still one of the untravelling mysteries of actuarial science on which the definitive unveiling of the truth has yet to be made manifest. I can only offer tonight a small contribution which may either shed some light on this matter or possibly further confound the issue.

The conventional wisdom is that UWP has a smaller reserving requirement for the same level of guarantee and this conclusion is confirmed on the basis of the evidence provided in Table A.6 of the paper. However, on further examination, it proved possible to produce an equally plausible example where the conclusion seemed to be the other way round, namely that CWP had a lower reserving requirement than UWP and I should like, if I may, to demonstrate this with a simple counter-example.

We may take, for example, a simple conventional 10-year with-profit assurance with the yearly premium of £1,200 and a sum assured of £11,000. We may suppose that the reversionary bonus declared throughout the 10-year term of the policy is 3.48% and the valuation interest rate is 2.5% with a Zillmer of 3.5%. For comparative purposes, we may compare a UWP contract with the same yearly premium and an allocation percentage of 41.67% in the first year and 100% in the second year with a bid/offer spread of 5% per annum and a policy fee of £18.00 per annum which is collected by surrender of units. We may also hypothecate a unit price growth rate of 7.25%. Furthermore, we ignore mortality throughout this example. The details of this and of my later example are in the table.

Example (mortality ignored)		
Yearly Premium – £1,200		
	Term 10	Term 20
CWP: Sum Assured	£11,000	£22,000
Reversionary Bonus	3.48%	3.675%
Valuation Interest Rate	2.50% or 5.365%	5.365%
Zillmer	3.5%	3.5%
UWP		
Allocation %	41.67% in first year 100% thereafter	0% in first year 100% thereafter
Bid/Offer Spread	5%	5%
Policy Fee	£18 p.a.	£18 p.a.
Unit Price Growth Rate	7.25%	7.25%

The 10 year example is very close to the one given in Table A.6 and in both UWP and CWP policies the guaranteed value at the end of the term of 10 years is £15,485 so the two policies have exactly the same level of guarantees at the end of the day.

Table 1, however, shows the underlying unitised with-profits UWP and CWP reserves and as in Table A.6 in the paper shows a significantly higher reserve for conventional with-profit thus confirming the conclusion that CWP has a higher reserving requirement than UWP. However, if we increase the valuation interest rate from 2.5% to 5.365%, then UWP reserves stay the same but the CWP reserves decrease and indeed the gap between CWP and UWP reserves narrows very considerably as shown in Table 2 but it again confirms that CWP has the higher reserving requirement.

TABLE 1			
Year	UWP Reserve	CWP Reserve	Ratio (CWP/UWP)
1	490	938	1.91
2	1,729	2,312	1.34
3	3,058	3,740	1.22
4	4,483	5,225	1.17
5	6,011	6,769	1.13
6	7,650	8,376	1.09
7	9,408	10,047	1.07
8	11,294	11,787	1.04
9	13,316	13,598	1.02
10	15,485	15,485	1.00

TABLE 2			
Year	UWP Reserve	CWP Reserve	Ratio (CWP/UWP)
1	490	744	1.52
2	1,729	1,955	1.13
3	3,058	3,255	1.06
4	4,483	4,650	1.04
5	6,011	6,147	1.02
6	7,650	7,756	1.01
7	9,408	9,484	1.01
8	11,294	11,342	1.00
9	13,316	13,338	1.00
10	15,485	15,485	1.00

TABLE 3			
Year	UWP Reserve	CWP Reserve	Ratio (CWP/UWP)
1	0	199	
2	1,183	1,249	1.06
3	2,472	2,387	0.97
4	3,854	3,620	0.94
5	5,337	4,927	0.93
6	6,927	6,406	0.92
7	8,633	7,978	0.92
8	10,462	9,682	0.93
9	12,424	11,532	0.93
10	14,528	13,540	0.93
11	16,785	15,719	0.94
12	19,205	18,085	0.94
13	21,801	20,655	0.95
14	24,585	23,446	0.95
15	27,570	26,478	0.96
16	30,772	29,772	0.97
17	34,207	33,353	0.98
18	37,890	37,244	0.98
19	41,841	41,476	0.99
20	46,077	46,077	1.00

We may now consider the example of a 20-year policy with a sum assured of £22,000 and a reversionary bonus rate of 3.675%. Again we value at 5.365% and use a Zillmer of 3.5%. In the corresponding UWP case the premium is unchanged but the allocation percentage is zero in the first year and 100% in each of the subsequent 19 years. The bid/offer spread, policy fee and unit price growth rate are the same as before. Again the level of guarantees at the end of the term are the same, namely £46,077.

In this case, the UWP reserves and CWP reserves are as shown in Table 3 and in this case it is clear that the CWP reserves are lower than the UWP reserve thereby challenging the conventional wisdom that CWP reserves are higher.

With regard, therefore, to the proposition that UWP has the lower reserving requirement than CWP, I shall have to fall back on the traditional Scottish verdict - "Not Proven!"

Mr J. S. R. Stocks Sections 3 and 5 on corporate and reserving issues are very relevant for many offices at the present time. Section 3.1.1 deals with the various options for corporate structures. Several options are considered but I want to examine further the position of a conventional with profits proprietary office, a typical 90/10 office which, for the reasons given in the paper, now writes all of its with profit business as UWP. This office also writes unit linked business and, as is quite common, uses the same products and charging structures for both unit linked and UWP, that is UWP is just one of the investment funds available.

For the UWP funds there is, strictly, no fund charge as the fund price is not governed directly by the value of assets from which such charges can be deducted. For internal management purposes, a notional UWP fund charge is often used, for example, as a charge on investment returns in determining bonus rates. Such a deemed fund charge puts UWP on the same footing as unit linked. In particular, sterling reserves can be calculated without having to distinguish between UWP and unit linked. Separate treatment may not be meaningful even where it would be possible.

Writing UWP in the main policyholders' fund does not present any interesting structural problems except that offering UWP as an investment option implies that unit linked business must also be written in that fund. However, things become more interesting when UWP business is written in a subsidiary company originally set up to write unit linked business, again as is quite common.

The UWP funds could be retained within the subsidiary but it may then not be possible to offer a true with profits contract, that is one exhibiting features listed in Section 2.2.1. This has sales and marketing implications, particularly if the office wants to remain known as a with profits company. Also, if the subsidiary is wholly owned by the main policyholders' fund, it may be difficult to arrange for the main company shareholders to participate in the UWP surplus. The UWP funds are, therefore, often reassured into the main policyholders fund and, in these circumstances, the issue of the fund charge can be very pertinent. With UWP being reassured back into the main company, the fund charge will arise in that company whereas the maintenance cost, apart from investment management, will be incurred in the subsidiary. This has reserving implications. If no UWP fund charge is paid by the main fund to the subsidiary, then sterling reserves in the subsidiary must be increased. If a full fund charge is paid net of investment management costs, the sterling reserves will be as for unit linked.

Where the subsidiary is wholly owned by the main policyholders' fund, this may not matter too much to the main shareholders as the main fund finances either an annual fund charge or higher sterling reserves. Where, however, the subsidiary is wholly owned by the main shareholders' fund, any fund charge paid to the subsidiary should be reduced to take account of the shareholders' 10% interest in the UWP investment surplus in order to avoid a double-take by the shareholders. With current levels of UWP bonuses and fund charges, this could result in a very low or nil payment. It could, theoretically at least, be negative. The main shareholders' fund would be required to finance the resulting additional sterling reserves either by a transfer of capital to, or by a reduction of profits in, the subsidiary. Similar considerations apply where, instead of having a separate subsidiary, there is a separate 0/100 sub-fund with the UWP funds being effectively reassured to the 90/10 fund.

Turning briefly to reserving issues in Section 5, I agree with the authors' comments in Section 5.2.1 on the lack of appropriate regulations and guidance. In particular, it is not clear when future premiums have to be taken into account and a net premium valuation used. Assuming that future premiums can be disregarded, the question is "How are accrued purchases to be valued?". It is suggested that most offices use the face value of UWP units. How does this comply with the current valuation regulations?

To start, the face value of units should be accumulated to maturity at the guaranteed rate, which may be 0%, with any initial units being discounted as allowed in policy terms. The guaranteed maturity benefits are then discounted at a rate no greater than the yield on the assets allocated determined in accordance with Regulation 59. This gives a minimum reserve but one which may not satisfy Regulation 54. Using the face value assumes that future bonuses, both annual and terminal, will be financed from the difference between the face value and the minimum reserve, plus future total investment returns in excess of the valuation rate. Current surrender value practices are also relevant as discussed in the paper.

The same accumulation and discounting approach can be used in the GAD mismatch test scenarios to establish the minimum reserve under the changed conditions, but what provision should be made for future bonuses? If these minimum reserves are used without adjustment, future bonuses would be financed only by the excess of total future investment returns over the valuation rate in the revised investment conditions. For offices which have increased their proportion of fixed interest assets and have used the resulting higher yields in the mismatch test, this excess could be significantly reduced. It is questionable if this approach satisfies Regulation 54. Consideration must, therefore, be given to making provision for future bonus in the mismatch test consistent with the implicit provisions in the published reserves. How much this should be will depend on how the office's bonus philosophy would be applied in the conditions underlying the mismatch test scenario.

Mr D. M. Pike I would like to look first at Section 3.1 which compares the effects on a proprietary office of writing UWP in either a 0/100 or in a 90/10 fund.

It is interesting to note from the Working Party's survey on UWP business that 12 out of the 14 proprietary offices surveyed were writing business in a 90/10 office (Question 3.9). Since then, of course, one mutual office has announced a partial demutualisation and, from the policyholders' circular, it appears to me that it has joined the minority of the 0/100 sub-funds since it says the charges are the same as on unit linked business. Of course in that case there is the added twist that the with profit policyholders have proprietary rights and receive a proportion of profits from the 0/100 sub-fund.

Going back to the paper tonight, Figure 1 shows how the 90/10 system makes the shareholders' value apparently much more sensitive to investment performance. I would like to point out, firstly, that the measure used in this case is the present value of future profits at a risk discount rate, in this case 12%, which is the commonest method of measuring shareholder value. This is not the only possible measure and you could, for instance, use the internal rate of return on the contract which might give a different pattern. Secondly, I would like to point out that the extent to which the proprietors may accept that the value is sensitive to future investment performance may depend on how the business is financed. For instance, if the finance comes to a significant degree from a reinsurance arrangement which requires a rate of return, fixed at the issue of the business, of 12%, then this is an appropriate way of looking at it. Alternatively, if it is financed by equity capital then the shareholders may well accept the sensitivity to future investment return as shown by the 90/10 fund provided that they can still earn the desired risk premium over a portfolio of equities.

I turn now to Figure 4 which shows the sensitivity of the policyholder benefit to renewal expense performance. Lest any readers get too much of a shock from the sensitivity of the 90/10 fund, I'll point out that the scale of the y axis is different from in Figure 2. I have a suspicion that in this case the authors are trying to make out a case for full disclosure of expenses at point of sale in the case of 90/10 offices but not for 0/100 offices.

Sections 3.2.2 and 3.2.3 discuss MVAs which are also covered by the Working Party's survey in Questions 2.10 and 4.8. The first of these questions in the Working Party's survey discusses, amongst other things, the circumstances in which offices guarantee not to apply a MVA. Also the commentary which the Working Party wrote points out the possible reserve implications for the 12 offices in the survey who said that they guarantee that they will not apply a MVA in a wider range of circumstances than maturity, death and regular withdrawal. The other question in the Working Party's survey which covered this topic shows that 14 out of the 28 offices surveyed have now imposed a MVA on surrenders, so perhaps the authors' fears of policyholders' expectations building up have been stilled somewhat by that.

Section 3.2.4 of the paper talks about offices which do not include an allowance for terminal bonus on surrenders and thus make profits and states that this does not appear to happen on UWP. Referring again to

the Working Party's survey, one of their questions, 1.11 (b), shows that 7 out of 26 offices are not currently adding terminal bonus on surrenders, although the survey did note that several of those 7 offices did add "not at present".

Lastly, a comment on smoothing which is mentioned briefly in 3.3.7 of tonight's paper. In the Working Party's survey, 10 out of 29 offices were using a different smoothing approach from conventional with profits. The Working Party's commentary points out a possible inconsistency in that nearly all offices were using the same investment rates for conventional with profits. However, I don't necessarily see any inconsistency between using the same rates of investment and at the same time using a different approach to smoothing values for payout purposes in the case of UWP.

Mr A. K. Gupta My own office introduced UWP business in 1984 and has now switched almost totally to this type of business and the reasons for doing so were twofold. Firstly, because of the more efficient financial structure of such products and secondly because of the ability to develop products which were considered to be more attractive to our customers.

Firstly, the financial structure. My own experience is that our new unitised contracts have similar day 1 new business strains compared to traditional with profit contracts but they have a faster circulation of capital. However, the real benefits of the UWP plans lie in the fact that, providing they are designed accordingly, the reserves are far more responsive to changes in interest rates and reflect more closely changes in the valuation of assets.

Turning to the increased consumer flexibility, the definition of the UWP contract in Section 1.2 of the paper for me contrasted neatly the inflexible nature of conventional with profit contracts compared to the flexible nature of unitised contracts. Our own experience is that UWP contracts have enabled us to add more features which are considered attractive to policyholders.

I would not pretend, however, that UWP plans are not without their particular actuarial issues. They do present some very real actuarial issues which revolve around reserving, surrender value philosophy and bonus strategies. However, the problems here are very similar to those relating to conventional with profit plans but it is the transparency of UWP business which exposes these issues to the policyholder and to the market and which therefore requires the actuary to justify his approach. I can think of very few, if any, of the issues highlighted by the previous speakers, some of whom are apprehensive of unitised plans, which do not apply to conventional with profits plans. UWP plans do not permit the actuary to hide behind the glorious words "at the discretion of the actuary" but do require him to justify how he is using his discretion by formalising and explaining his approach to surrender values, bonuses and reserves.

Turning now to with profit bonds, my concerns on these are threefold. Firstly, in Section 6.1.3, the authors highlight the concern that UWP bonus rates can be compared to building society deposit rates and I think it is essential we avoid the mis-selling that can be associated with this. Secondly, the way with profit bonds are sold can result in a bunching of guarantees similar to those experienced by companies who used to sell unit linked plans with maturity guarantees. Thirdly, but most significantly, the way many with profit bonds have been written and sold will have created the expectation that payouts are guaranteed but that the policyholder can expect to earn bonus interest rates comparable with building society interest rates and companies which do this are effectively in the banking business but, more significantly, offering banking products backed by equities. I hate to think what reserves are required if you operate in this way. Clearly, it is essential that a company's use of its MVA and surrender value bases and payout philosophies are consistent with its reserving. As actuaries, given the diversity of UWP contracts available in the market, there is clearly some need for us to standardise reserving approaches, MVA approaches and so on.

The experience the profession has with these contracts 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 and for this reason I very much welcome the paper which we have before us tonight and the discussion which it has generated.

I believe 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 that we act constructively to resolve the problems associated with these plans. We live in a commercial world and if we prove unwilling or unable to address the issues posed to us by the marketplace, the demand for our services will decline.

The President - Perhaps I could reveal my ignorance by asking the authors one question which I think has possibly been answered by some of the discussion this evening.

Within the European Community framework an office may quite rightly point out that any regulations will have to comply with the 3rd Life Directive with its reference to using prospective valuation methods. The authors suggest that an office which uses a MVA may experience some problems because of the inadequacy of a face value base figure. How serious a problem do they actually see that likely to be in practice?

Mr H. W. Froggatt (author) It seems to me that the problem that we envisage is that if an office has to apply a MVA then there is presumably a very good reason for it, namely that the value of its assets have fallen. Now, in those circumstances, it may be that the office, unlike, perhaps, David Forfar's office, doesn't have the luxury of being able to continue to value its UWP business at full face value of units. We therefore envisage that there could be situations following depreciation of assets under which an office would want to be adopting a lower value, by taking advantage of prospective valuation methods and discounting the units. Of course, we would envisage that the office would take account of whatever the interest rate requirements were for discounting.

It is the inter-action of those interest rate requirements and the MVA which have been applied that creates the problem. For example, if policies are very close to maturity and an office has a block of assets with a large equity content matching the with profit business and the assets have depreciated by 20%, then for the business which is within one or two years of maturity it is likely that it would not be possible to discount that business at 10% or 20% which is what might be needed to take account of the fall in asset values which had occurred.

Mr P. H. Grace Early in the paper, the authors draw attention to the dearth of papers on this subject, although contracts have been around for almost 10 years. I note, however, that they did not make reference to the first Faculty seminar that was, in fact, devoted to the subject of UWP. I assume that the relevant papers are deposited in the Library*.

The authors draw attention to figures published by the Association of British Insurers (ABI) to illustrate the growth of unit linked business during the 1980s. I believe that, at the end of that period, the ABI issued a request to members not to treat UWP as unit linked business. This request may have coincided with the development of with profit bonds but implies that at least some members prior to that were treating UWP business as unit linked and thus the figures in Appendix 1 may give a misleading picture.

In Section 3.4.4, the authors draw attention to differences in the valuation requirements. In particular, that after a switch there may be a release or a strain. I believe that with the application of Regulation 56 of the Valuation Regulations that no further contractual changes should cause a strain means that a switch should not in itself cause such a strain.

This leads on to Section 4.13 where the authors draw attention to solvency margin considerations. I believe that unless the terms for switching are fully guaranteed at the outset, and cannot be varied to reflect market conditions, there is no investment guarantee associated with unit linked funds and the solvency margin can be restricted to the lower level. Following a switch to UWP, there will be some form of guarantee of capital and possible future interest and this has to be reflected in a higher solvency margin. Thus, although there might not be a change in the valuation liability, there could be a change in the solvency margin requirements.

My final point concerns the valuation of liabilities. In Section 5.2, the authors draw attention to the lack of reserve structure. It could be argued that Regulation 54 deals with the problem, although it is not specific. Because UWP is so intertwined with unit linked business, there seems little point in UWP regulations unless we also have unit linked regulations. If there is a reluctance on the part of the authorities to introduce regulations in this area, the profession should act in order to protect its own name before it is too late. This may mean more Guidance Notes which is not necessarily the most satisfactory route.

*(Editor's note:

Papers from the unitised with profits business seminar are in the Faculty Library. Full details are as follows:

FACULTY OF ACTUARIES. Unitised With Profits Business Seminar, 3 November 1989. (Consists of the following papers: 1. COOPER, David. Background and basic design. 2. LUMSDEN, I.C. Actuarial aspects of with profits funds. 3. SMITH, Harry. Unitised with profits business.)

Mr B. R. Macdonald I am going to go off at a tangent. In Section 3.2, the authors refer to it being common for surrender values to be less than asset shares and they also mention subsidising maturity payouts by paying lower surrender values. I don't feel that a remark like that can be allowed to pass without comment.

It seems to me that PRE would require something along the lines of the asset share to be paid. If we, as a profession, are supporting lower payouts on surrender, then if this is not unlawful, it seems to me to be unprofessional. I don't believe that we should be making remarks like that for the press to get hold of. It really is time we did something about surrender values before the press or the legislators eventually force us down the lines of having guaranteed surrender values which would be very unattractive. Several Presidents have said in the past that it is time we did something about surrender values and I would support that.

Mr R. J. H. Milne Let me start by saying I didn't come prepared to speak tonight. I don't have any quotations from the Bible but, to paraphrase Mark Twain and take his words a little out of context, I think any reports of the death of the traditional with-profits contract are greatly exaggerated and we have to put things in perspective.

It has been said by a number of commentators that policyholders can have a better understanding of the UWP vehicle. Well, I don't accept that. I think that policyholders think they have a better understanding of the UWP vehicle. What they think is that they are getting what they see in front of them on the piece of paper and that this is the value of their plan. We really are in danger of pushing them towards unreasonable policyholder expectations. Now I am not suggesting that policyholders fully appreciate and understand a traditional with profits vehicle. Some of them think that what they see as the projected benefits at maturity would be available on early surrender, but I think there is plenty of research to show that most accept that a surrender value involves some form of reduction factor and they don't get what is down on the paper in front of them.

Mr Forfar, with his example, showed us that it is not obvious that UWP carries lower reserving requirements. I think, however, that what is happening with a number of offices is that lower reserving requirement come about because UWP offers lower guarantees. Many of the products available in the market at the moment carry no guaranteed minimum rate of bonus, others are 4% or slightly less. Traditional with profits, of course, usually carries an implied guaranteed rate of bonus - 3%, 4% or even 5%.

It is suggested that traditional with profits is a difficult contract to which to attach rider benefits and other frills that are attractive in today's marketing conditions. However, I think that that is really a problem of technology. In the old days, when calculations for with profit contracts were done on sheets of paper with a pencil, it was difficult to change the retirement age or cope with increment premiums. With today's technology, and with everything being systems-driven, I don't think there is such a problem and many traditional with profits vehicles have these types of rider benefits.

I think with UWP there is a marketing "Catch 22". We have seen from the paper, from the discussion at the Institute and from the survey carried out by the Working Party that, if you applied MVA factors correctly, they would be applied with a reasonable degree of frequency and we would have a marketing disadvantage in the eyes of the distribution channels and the customers. On the other hand, if you accede to marketing requests and impose the MVAs sparingly, it would appear that you are forced to set up an additional reserve and one of the perceived advantages of UWP is thrown out of the window.

So, on balance, I think we are going to see the continuation of traditional with profits business for a long time to come.

The President - Before Mr Milne spoke I was going to ask a question. I think he started off by answering it, but when he had finished I wasn't sure! Perhaps I could put my question to the authors.

Sections 4 and 5 describe the pricing and reserving issues involved and certainly anyone reading those sections alone would be convinced of the central rôle of the actuary in these topics. Any guarantees that are to be offered will necessarily increase the reserving and capital requirements. I suspect that there is a suggestion that some of these contracts currently on offer provide guarantees which are, in the authors' view, unnecessary. I would be interested in the authors' views as to whether or not too many unnecessary guarantees are indeed now being provided.

Mr J. E. O'Neill (author) I think we might be hesitant to make such a remark. We presented an over-simplification in that we saw UWP contracts in a range between the established conventional contract and something that looks like a unit linked contract. Against this background, the important issue is the guarantees. The level of guarantees selected depends where in that range the contract is placed. Guarantees have to be reserved for and our approach and our thoughts were that if you establish the right structure for allocating profits and sources of surplus then the design, pricing and the other factors should follow. The point we were making was really the need for consistency between pricing and reserving.

Coming back to the point you raised with us, President, which is "Are guarantees too high?", we felt that when all of the information was reviewed with hindsight that there is certainly very strong evidence that guarantees were at the higher rather than the lower end of possible ranges but it is very easy for us to say that. Firstly we have the benefit of hindsight and secondly interest rates have fallen by such large amounts compared with the assumptions that actuaries would have been making a few years ago.

Mr H. Smith (closing the discussion) A very revealing section of this paper has received comment tonight only from Mr Grace: I refer to the very end and the bibliography and what is interesting about it is just how short it is. Bearing in mind that we are now looking at the type of contract which forms the backbone of the new business of the majority of major life offices in this country, this is rather worrying. I am pleased to say that tonight's paper together with the discussions both here and a few months ago in the Institute should go a significant way towards addressing this problem.

It is now almost four years since the Faculty held the one day seminar on this subject we heard referred to and, while we have seen significant movements in the marketplace in the interim and, in particular, a quite dramatic shift towards the use of these types of contracts in the ordinary life marketplace, many of the problems and issues raised then have not yet been fully addressed.

We now have the Joint Faculty/Institute Working Party report on the current situation and this clearly reveals a number of areas where attention is required. The authors have given us valuable observations on many of them and a number of them have received comment in tonight's discussion.

Before proceeding, I would like to comment on the authors' definition of these contracts in Section 1.2 and their suggested distinction from conventional with profits. In my view, the definition given approaches the topic from the concept of the investment linked contract rather than from what it actually is - a with profits contract. It refers to discretionary bonuses without relating this to the nature of the surplus from which these bonuses come. I would far rather they started from a clear definition of a with profits contract and then proceeded to establish what was special about the UWP contract. This brings me to the second point.

While I accept the method of distinguishing between conventional and unitised given in Section 1.2.2, I think this point can be over-stated. After all, the guaranteed benefit on a conventional with profits contract is generally fairly close to the sum of the premiums. It is only the ability to vary future charges which denies this to the unitised contract. I think we have to add a further point of distinction even though it may seem to state the obvious. This distinction is that, while a conventional with profits contract as we know it in this country is one where the reversionary bonus is declared as an indirect function of the total premiums payable throughout the contract, a UWP contract is one where the bonus is declared on the premiums actually paid. These two points then - the structure of the bonus and the lack of guarantee of a final benefit value - are the essentials of this contract type. What we see in the marketplace is a series of marketing devices to make it look as if it belongs to the family of investment linked contracts. It is actually very different.

Mr O'Neill explained the background to the structure of this paper and by necessity the paper covers a very large area. As you would expect from that, the discussion tonight has been fairly wide-ranging. I propose to concentrate my remarks on a small number of topics.

The first topic I would like to look at is that of the level and the nature of the bonuses. We are currently emerging from an era in which reversionary bonus rates for conventional with profit contracts have been set at levels which were clearly too high. With large volumes of mature business in all the older offices, the dangers of this were all too apparent forcing the realism which we have started to see in recent years.

In Section 6.1.3 of the paper, the authors recognise the equivalent danger of this for UWP. Unfortunately, they don't go far enough. They mention the difference between the bonus rates themselves, which tend far

too often to be compared with deposit interest rates, and the ultimate results of these contracts which, with sound equity investment, should outperform the returns from deposit-type investments. While offices have managed to sustain levels of bonus in the past which have been comparable with deposit interest rates, the authors have stated, rather euphemistically, that care is needed to avoid virtually guaranteeing such rates for the future. The industry generally has shown a serious lack of backbone on this topic in being afraid to stand up and say that these rates are different. As several speakers remarked, we have seen very high levels of bonus which cannot possibly be sustained in the long run if the contract is to be based on equity investment and if there is no intention to base it on equity investment the very *raison d'être* for the contracts disappears. By allowing these bonus rates to be seen as comparable with deposit rates, the profession and the industry can only do the concept great harm. Without permanent capital backing, the scope for equity investment above these levels must be limited or nil.

The authors have not actually attempted to look at what might be the correct level of such bonus rates. In my view, the distinction between them and terminal bonuses is much the same as the classical distinction between reversionary and terminal bonuses for conventional with profits business. As such, the main bonus rate should be set at a level to reflect the income received while the terminal bonus reflects capital appreciation. As we would expect a high degree of equity backing, it is not unreasonable for the main bonus rate to be close to the equity dividend yield. In fact, I think the industry might do itself a favour by renaming these bonuses something like "dividend bonus". As Mr Gupta said, we now have a much more transparent contract and it is all the more important to ensure that it is presented correctly. I await with interest to see how the industry meets this challenge.

Still on the subject of bonus, I come to the authors' observation in Section 6.1.2 on the potential for volatility. They state that it is possible that the reasonable expectation of UWP policyholders would be consistent with more volatile results. I cannot agree with respect to final maturity benefits. UWP policyholders are not an extension of the investment linked marketplace. These contracts are sold in exactly the same markets to exactly the same people by exactly the same salesman as conventional with profits. What is more, the policyholders have possibly been given the choice of the volatility of investment linked or managed funds and have refused it. The generation before them who were sold conventional with profits may not have had that choice presented to them.

I would like now to come to the subject of the MVA. I think probably one of the most interesting results to come out of the Joint Working Party report that has been referred to tonight was the revelation in Section 4.8 that only half the offices surveyed have actually used their MVA. This greatly surprised me with the market movements we have seen in recent years. I was also surprised at the revelation in Section 2.10 of that survey that for half the offices the MVA is a discretionary adjustment, with that phrase hated by Mr Gupta, "recommended by the actuary" rather than something determined by reference to specific criteria.

In Section 6.1.4 of tonight's paper, the authors talked about policyholders' expectations on surrender values. (I notice they don't define whether they are reasonable or otherwise.) I would suggest that, where an office fails to use the MVA for the normal variations experienced in day-to-day market conditions, albeit smoothed, then that office is creating an expectation it will not use the MVA in future. That does not take away from its actuary the right to take serious action in exceptional conditions, but surely if the actuary is failing to monitor the current generation of leavers, it is inequitable if he then applies these adjustments to future generations.

I agree with Dr Ransome that we are storing up trouble by not being explicit about how this MVA will be applied. I would say the answer is actually very simple, in theory at least. The MVA should basically be an automatic process. Anything else creates some form of expectation of guarantee relating to the face value of the units. The problems are in the practice as this can only meaningfully be done by some form of shadow fund technique.

The problem is made much worse with the existence of switching. If switches are done without the application of a MVA the policyholder is being invited to use the fund effectively for short term deposits. This is another factor which again can only lead to the destruction of the equity based nature of the contract. And while on the subject of switching, I strongly agree with the comment made by the authors on the necessity of controlling the terms on which switching can take place. Going back to the survey, there was little evidence that this was happening and, in particular, half the offices surveyed had no restriction on switches for short outstanding terms.

Finally on the subject of the MVA, one worrying aspect to come out of the survey is related to the number of offices having guarantees that these adjustors could not be applied at certain specified times. I agree with Mr Purchase's comments at the Institute meeting that some of these guarantees seem to be rather onerous, in particular those relating to the decade of retirement. I was not at all sure about Dr Ransome's view that application of the MVA was less significant in pension policies. In fact, most of the benefits are not taken at selected retirement dates.

Going on to the subject of guarantees, and the 4% guarantee as the standard guarantee on maturity, I remember discussions in the mid 1980s on the scale and importance of this 4% guarantee. Going back again to the Working Party report, this shows that this guarantee is fairly common. I think it is more common than Mr Milne imagines. At the time, the rate seemed to be so low as to be hardly worth worrying about. Mr O'Neill pointed out that times have certainly changed. It does make one wonder what marketing benefit if any was obtained with such an apparently low level of guarantee. The actuarial cost is certainly clear.

As the authors state in Section 4.1.6, an office can limit the effect of the guarantee by restricting it to premiums paid to date. Again, going back to the survey, I was surprised to find that one third of offices with such a guarantee extended it to future premiums.

We all tend to be swept along in the euphoria of these new contracts. There is one aspect I would like to mention which has not been covered by the authors and has not so far been referred to tonight. The topic I am referring to is the question of administration costs.

While we have covered a number of actuarial aspects which have to be considered and where there are solutions, here the problem is actually insoluble. The administration costs of these contracts are, and always will be, significantly greater than those of the contracts they are replacing. Why? Firstly, flexibility inevitably means cost in the operation of the flexible aspects. Secondly, there are many more transactions that can be applied to them but, probably most importantly, the data requirements are much more significant and that requires not only extra storage but also significant extra processing capacity to maintain this information.

I agree with Mr Gupta on the merits of these contracts and disagree with Mr Milne on the future of the conventional contract. Markets tend to move to more sophisticated (i.e. more interesting and hence more marketable) contracts, even if this means higher costs. Without question, UWP contracts are more flexible. They suit the customer who can add on features, choose partial investment linking and generally have much greater freedom with his investment. They suit the companies because of the lower levels of guarantees and from the viewpoint of the lower capital commitment, assuming there is such. It is naive, however, to think that this comes to us free. The price is significant. I can only echo the views eloquently expressed three years ago by Sir Mark Weinberg that the industry has gone for more and more complex products but in doing so has significantly altered its cost base. Now let me add that this is an area for vigilance by this profession. Significant improvements in the cost structure can be obtained by the correct decisions on the record base of these contracts. The actuary can ask about the relative costs of the record base to support different bonus structures. As another example, where switching is not allowed he can avoid holding the complex record base needed to support it.

Thirty years ago, if an actuary set up a record base that necessitated his company employing an army of clerks to maintain it, he would quickly have seen the folly of his ways. Today the costs are hidden in a black box but the extra costs are actually still there.

Finally, I would like to thank the authors for giving us an opportunity to discuss an extremely important subject. I cannot help but notice, however, that they have adopted the style of a Victorian novelist with a quotation at the beginning of every chapter. Fortunately, they have not extended this comparison into the length of the paper. I would say, however, that the major difference between the quotations in Victorian novels and the quotations in this paper is that in most Victorian novels I have read I can usually work out the relevance of the quotations! We have certainly been treated to a few more quotations during the evening. I await Mr Froggatt's closing address with interest to find out exactly what is the relevance of Gamaliel's Advice to UWP business and the actuarial profession.

Mr H. W. Froggatt FIA (replying to the discussion) Thank you very much for your response and the opportunity to present this paper here and also for the very wide range of points which you have raised. I'm not going to treat you to a response of Victorian novel proportions, you'll be pleased to know. Also, the points

which were being raised came in such profusion that I feel that I can't do justice to them all now. That is apart from the ones which I think need a considered response.

When we wrote the paper we were conscious of a number of areas in which we could have expanded it but the subject was UWP and, to keep the length of the paper respectable, we did discipline ourselves very largely to considering just the similarities and differences between UWP and conventional with profits on the one hand and also, of course, unit linked business and UWP on the other. In general, we didn't feel that it was appropriate to attempt to deal in any detail with the wider problems of with profits business and, as has been pointed out this evening, UWP as written in the U.K. is, with one or two exceptions, with profits business.

I think the main issues which are covered by the paper and which we hoped would be covered in the discussion were valuation, PRE, shareholder/policyholder issues, MVAs. All these points have been covered today. I will concentrate a bit on valuation and leave the others for possible inclusion in a written response.

We restricted the coverage on valuation initially because the 3rd Life Directive is causing the profession, both North and South of the border I believe, to look very carefully at what valuation regulations are going to be appropriate following July 1994. An additional reason was that we didn't at that stage have any of the work of the UWP Working Party. We knew they were doing that work and there didn't seem any point in duplicating it but, of course, it wasn't available and, even if it had been, it might not have altered our decision.

In terms of what I would be looking for in a valuation basis, the prime thing is consistency. As has been indicated this evening, higher guarantees ought to mean higher reserves. Now, UWP can have guarantees higher than with conventional with profits business or lower. It is a company choice, or at least it is a company choice to the extent that the company has the financial muscle to be able to choose in that way. It is very difficult to generalise because the UWP contracts in the market are not homogenous. Unless one looks in a fair amount of detail at an individual product, one doesn't know exactly where its guarantees lie within the range of possible guarantees or where it is in the range between linked business on the one hand and conventional with profits on the other. So we didn't generalise, but I would like to say that, in relation to some of these points, it would be very interesting to examine at our leisure the relative strengths of the valuations which Mr Forfar gave as examples.

One of his examples had a net premium valuation at 5.375%. When there is a relatively high valuation interest rate under a net premium valuation, there may well be a lower implicit provision for future bonuses depending on what the investment conditions are. So our message is that it is very important to look at the valuation basis in relation to particular individual contracts and we await with a great deal of interest the results of the Joint Working Parties which have been set up between the Government Actuary's Department and the profession and which may be reporting later this year.

There is one apology I feel we ought to make and that is in relation to the bibliography. We were aware of the Convention at the Faculty and the reason why it didn't get included was that when we did our check of published papers, the Convention papers certainly didn't appear in the Institute Journal. I believe that they didn't appear in the Transactions of the Faculty either.

I will close there and take the opportunity to consider in more detail the transcript of tonight's discussion and, perhaps, respond in writing.

The authors subsequently wrote:

1. The authors noted with interest that speakers approached the discussion very much from the perspective of UWP contracts perceived to be conventional with profits repackaged. Differences in guarantees, financing requirements, flexibility and transparency between UWP and conventional with profits did not seem to be seen to affect significantly the nature of with profit contracts offered nor the emerging benefits. The authors thought this was understandable for any offices that have no capital worries, that do not alter their investments to reflect the nature of the liabilities they have written or that (surprisingly) achieve the same investment performance irrespective of their mix of investments. The authors thought few offices currently fell into these categories. Part of their intention for the paper was to show the scope, provided by the UWP concept, for altering many aspects of the with profit contract.
2. Comments were made about the example shown in Figure 7. The comparison was deliberately extreme to illustrate the extent to which at any point of time the guarantee of final benefit (assuming premiums

continue) under a UWP contract (with no guarantee in respect of future premiums allocations or charges) could differ from a conventional contract’s guaranteed sum assured and attaching reversionary bonuses.

3. The authors support speakers asking for consistency of valuation bases between UWP and conventional with profit business and hope that any eventual bases will reflect the nature and extent of guarantees of particular contracts. They feel it is important to analyse, as some speakers have, differences between the contracts as this helps to explain why the inconsistencies are arising.
4. A number of references were made to valuing UWP at face value of units (with additional provision for expenses if necessary). One speaker mentioned the problem with a net premium valuation was its lack of sensitivity to a change in market value of assets (or to interest rate changes). A number of speakers mentioned using a face value (which does not change at all with market value) with a market value of assets. This might be regarded as taking to an extreme a net premium valuation shortcoming. The authors regard this as forming part of the explanation for the ‘not proven’ verdict on the relative strength of valuation bases between UWP and conventional with profits cited in the discussion.
5. In reserving, as in product development, a balance needs to be struck between maintaining continuity, preserving policyholder benefits/value, profits, capital requirements and valuation reserves. Inevitably, as UWP and unit-linked are different, any solution involves discontinuities and the associated risk of inequity.
6. The authors agree completely with the remark that with-profit and deposit-based investments are different and hope that the life insurance industry will have the courage to acknowledge publicly that on average we expect the former to do better but in some circumstances they might do worse.
7. Concern was expressed in relation to the concentration of investment and disinvestment arising from the sale of single premium UWP. The authors felt that this clearly affects an office’s ability to smooth results over time and between different groups of policyholders. Flexibility of premium payment and switching facilities increase the options available to individual policyholders to select against the office or other policyholders and this is also likely to reduce an office’s ability to smooth payouts.
8. It is open to an office not to allow the additional flexibility facilitated by introducing UWP. We think that this would enable much of the concern mentioned about increased administration costs to be avoided, although invalidating one of the major reasons for introducing UWP.
9. Mention was made in relation to UWP reassured from a subsidiary company of fund charges arising within the main company but with the maintenance costs being incurred within the subsidiary. It seems to the authors that if this was thought undesirable the reassurance arrangements could be changed so that the main company undertakes (or pays for) the appropriate maintenance costs.
10. The authors agree that a switch made on contractual terms should not cause a valuation strain. However, for most switches into or out of UWP although the ability to switch may be contractual, the terms are usually not and strains could arguably arise. It might be thought good practice to reserve sufficient to avoid strains. However, it is not a U.K. requirement or normal practice to provide for terminal bonus within mathematical reserves. To the extent that any switch includes a terminal bonus allowance the authors would therefore argue that there is legitimate potential for strain.