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REFLECTIONS ON A TAKEOVER OF A UNITED KINGDOM INSURER: A CASE STUDY

BY I. L. SALMON, F.I.A., F.I.A.A., A.S.A.
AND A. E. M. FINE, M.A., F.I.A., A.S.A.

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ABSTRACT

The actuary's expertise in the field of life insurance lies mainly in the application of mathematical and statistical techniques to the wide range of issues associated with life insurance business. In particular, the actuary has developed very sophisticated tools for modelling and forecasting and to help in establishing equity between policyholders. In recent years, owners of such businesses, be they policyholders or shareholders, have been coming to depend increasingly upon the actuary's skills to establish value for their overall business. On an ongoing basis, these requirements relate to such things as the need for more complete balance sheet presentation in the case of a proprietary company. Additionally, and inevitably, the actuary is drawn into the world of financial dealing in respect of takeovers and mergers where he is becoming exposed to the commercial risks inherent in being an 'expert'. The stakes are increasing and in the larger cases hundreds and even thousands of millions of pounds are involved. In this world, the actuary can expect to be subject to a range of pressures from clients, media, takeover rules and so on, all of which are well removed from the actuary's traditional comfort zone. As the stakes increase, so does the threat of litigation.

The authors have recently been involved, one as principal and one as actuarial adviser, in the largest hostile takeover in the life insurance industry in the U.K. and, in the process, many issues of significance to the individual and the profession as a whole were exposed. This paper is intended to address this very important area and to flag some areas which could prove to be of increasing concern to the individual and to point to some where the Institute may wish to become involved.

KEYWORDS

Appraisal Value; Embedded Values; Mergers and Acquisitions; Professional Conduct

1. INTRODUCTION

1.1 In recent years we have seen an increasing number of takeovers, mergers and demutualisation programmes in respect of life insurance operations in Britain and elsewhere. In all such arrangements inevitable questions arise concerning the fair value of a life operation to purchasers and sellers of the companies as well as the equity of any changed arrangements for ongoing policyholders. The responsibility for the establishment and monitoring of life insurance control programmes, for example liability requirements, rests with the actuary, who has always been at the core of life company structures. Increasingly, therefore, those involved in takeovers, etc., are turning to the actuary to help them to understand the issues and to establish fair values and equitable arrangements. Papers have been presented to the Institute on the issues surrounding valuation on at least two occasions in the last few years. However, the theoretical contemplation of the issues is, in the end, no real substitute for the practical day-by-day result where two general situations arise. One involves agreed situations where the parties on both sides seek to establish an accord on the terms. The other involves conflict, resulting from forced or contested takeovers and forced mergers.

1.2 The end of 1989 saw the close of the biggest takeover in the U.K. insurance industry's history, with a subsidiary of the Australian Mutual Provident Society (AMP) successfully bidding for the Pearl Group. The major significance of this takeover was emphasised by its appearance in tables published by *Acquisitions Monthly* in its review of 1989.[(1)] The authors were significantly involved in the bid. In their respective roles, of principal's representative and consulting actuary, they did not share all of the same professional obligations and this has the effect of highlighting a number of matters of significant professional interest. We believe that these matters are of sufficient interest to actuaries generally to warrant the submission of a paper to a sessional meeting, and one purpose of this case study is to draw attention to such matters and to those where it is thought that the Institute might consider establishing practice guidelines.

1.3 A second purpose is to highlight the difference between the market value of life operations as opposed to the value that might be deduced from examination of recent transfers to profit and loss accounts. This leads, inevitably, to consideration of the need to include some estimate of that value in balance sheets or annual statements, a practice which has particular significance to composite insurers and others with a stock market quotation, and is likely to have increasing significance to others such as mutuals. The Association of British Insurers (ABI) set up a working party earlier this year "... to enhance the usefulness of published accounting information". The working party's draft report, together with a consultative document, was issued on 5 September and the consultative process is now under way. An object of the report is to produce a reporting method with similar aims to those of the U.S. GAAP but relating to U.K. conditions.

1.4 It is not intended to deal with the conflict which can arise between the views of competing actuaries when setting values from the respective viewpoints of buyer and seller or the partners in a merger. There must always be room for numerous and conflicting views, and the actuary will ensure that he is acting solely in a professional manner, both by seeking out relevant information to be included in valuations and in the advice he gives. However the question of fairness and accuracy in presentation has also to be carefully examined, and while, in practice, public presentation is largely outside the actuary's control, it is important to see that his views and any qualifications of a material nature are made public. Our world is becoming increasingly litigious and the danger of the actuary becoming included in a suit for negligence or unprofessional conduct is well known. In cases of transactions involving hundreds or even thousands of millions of pounds the risks are increasing. Self protection of the individual actuary is important, but even more so is that of the profession as a whole.

1.5 The paper is also not intended to engage in a discussion of the meaning of fair values and equitable arrangements. Discussions on these subjects have been held at the Institute in recent times and the individual circumstances lead to their own particular solution. What is addressed, and is important in the context of this case study, is the belief that sufficient details of the factors being used when making an actuarial judgement are made known, so that others can assess the validity of the judgement and conclusions. It is believed that, unless this degree of openness is adopted, the actuary lays himself open to unnecessary criticism and challenge.

1.6 One area of contention is that of the extent to which actuaries should disclose to a wider audience than that of their client the bases they have used in determining the values they attribute to a company. This matter concerns the actuaries of both bidders and targets. It is highlighted in this case study in relation to the rules in the Takeover Code which apply to profit forecasting. Clearly there is room for debate as to the extent of any disclosure. However as, at this stage, the Takeover Code does not directly involve itself in this issue, the Institute is in a position, if it deems it to be appropriate, to set out any preferences or guidelines.

1.7 Particularly sensitive areas, where we perceive the actuaries need to be especially careful, are those involving the determination and use of embedded values and goodwill. The use of multipliers in the determination of such values requires special care. A further area of particular sensitivity will result from any acceptance of the ABI Working Party structure for determination of 'profits' to be included in published accounts.

1.8 It seems probable that we are seeing a move to the more extensive use of embedded value and goodwill, resulting from the growing desire on the part of owners of life businesses to have such values included in revenue accounts and balance sheets. In particular, the ABI move confirms the intense level of interest. It is the view of the authors that such values can be included in the accounts, subject to proper qualification, and we believe it to be quite proper for shareholders and stock market analysts, as well as potential buyers or merger partners, to include such values in accrediting value to a company. However, the determination of such values carries with it the requirement for professional care, more so than in the valuation of, say, property, because of the number of uncertainties involved. Further, in view of the significance of such values to a company, the exposure of the detailed assumptions for critical external examination will be helpful and reduce the risk of the actuary being accused of hiding behind the cloak of professional judgement. The greater the uncertainties the more sensitive the issue, so that the degree of care required in determining and reporting on goodwill estimates is even more important.

1.9 In this very sensitive area the use of multipliers by actuaries to determine significant parts of values is of special concern. Multipliers have emerged as a consequence of the proposition that values in an individual company can reflect the results of another model. Multipliers, thus developed, represent 'short cut' methods. The use of such methods in the real world of revenue and balance sheets and company values is thus more than ever capable of challenge. Unless an actuary is able to show very clearly by reasoning and analysis that his use of a standard multiplier is justified, then he stands the risk of challenge which could, in some circumstances, lead to litigation.

1.10 One other area of concern in respect of multipliers arises from their general use by journalists and non-actuarial analysts. There is a growing risk that use of multipliers by untrained or uninformed people will damage the credibility of embedded values and goodwill, and this will become increasingly more important as the use of such values becomes more common.

1.11 The whole matter of responsibility and credibility in reporting is further highlighted in the ABI Working Party consultative document, which has as one of its aims to develop a position which will lead to the use of price/earnings ratios. Actuarial practices, no less than actions of boards, will, as a consequence, become subject to increasing scrutiny and, perhaps, challenge.

1.12 There are precedents for papers which, effectively, write up points of actuarial interest arising from actual commercial operations such as mergers of insurance companies. In most cases no direct reference is made to the companies concerned. Code names or index letters might be used instead. In this instance, because the companies concerned would be so readily identifiable, we feel that the actual names should be used, and hereafter AMP and Pearl (the bidder and target companies respectively) are used. Some matters are of commercial confidentiality and sensitivity, and in these areas we naturally feel ourselves precluded from public discussion. To this extent, therefore, our reflections on the exercise do not constitute a fully discursive treatise, but instead take the form of notes on the operation, which we hope will lead to some useful discussion.

2. GENERAL MARKET BACKGROUND

2.1 Appraisal values and embedded values are recognised tools which have been used by actuaries in the U.K. for a number of purposes for about 20 years. There is certainly not complete agreement between actuaries on the methodology to be used. For instance, there are differing views on the treatment of surplus assets in a with-profits fund (the estate) and on the treatment of locking-in of shareholders' funds. A full discussion of the issues involved and the methodology and assumptions in use is contained in the paper by Burrows & Whitehead and in the discussion thereof.[(2)] On the choice of basis to be used in appraisal valuations, different bases are appropriate in different circumstances and for different companies. The choice of basis is a matter for actuarial judgement, and different actuaries could easily choose different bases for the same company in the same situations. An example of why different bases may be applicable is that different shareholders have different perceptions of risk and would therefore require different risk discount rates. There is no guidance on either the method or basis of calculation of an appraisal value laid down by the Institute of Actuaries. Appraisal values are used in private negotiations for the sale or merger of life offices, for the internal monitoring of life offices and for remuneration linking and other internal management purposes. In all these circumstances, the methods, bases and sensitivities are fully disclosed and are available to those using the appraisal. The Australian paper by Miles & Fraser[3] provides a basic guide for parties interested in buying or selling a life insurance business.

2.1.1 The concept of embedded value is a more recent one and the term was introduced to describe the valuation of the life business excluding goodwill. A full definition of embedded value is given in the report of the Working Party on Embedded Values.[4] A recent development is the disclosure of embedded value profits (the change in embedded value across the year as a replacement for conventional profit figures in the profit and loss account). Embedded value profits are not recognised by actuaries in the sense that Generally Accepted Accounting Practice is recognised by accountants. There is no compulsion to use them and no guidance on their use by the Institute of Actuaries. In particular there is no agreement on the bases which should be used, and the extent to which adjustments should be made for special purposes. The consequences of any recommendations and/or agreements resulting from the ABI Working Party report will, no doubt, be considered by the Institute when and if appropriate and any necessary advice or guidelines given to members.

2.2 The application of embedded values and goodwill, and the detail conveyed publicly, varies from case to case. There have been a number of takeovers of public insurance companies in the U.K. before and since AMP/Pearl, and we briefly summarise the interesting features of these from an actuarial perspective.

2.2.1 Eagle Star Holdings plc. In the course of the contested takeover in 1983 the directors of Eagle Star published appraisal values of the life businesses appraised by consulting actuaries. This seems to be the first occasion that an appraisal value had been published. A copy letter dated 14 November 1983 from the consulting actuaries is shown in Appendix 1. No assumptions were stated.

2.2.2 Phoenix. In the course of the takeover in 1984 the directors of Phoenix published an appraisal value of the life business appraised by consulting actuaries. A copy of the letter dated 23 July 1984 is shown in Appendix 1. No assumptions were stated.

2.2.3 Equity & Law. Here there was a contested takeover in 1987, but no appraisal value was published.

2.2.4 Lloyds Bank/Abbey Life Group. In 1988 Lloyds Bank took a majority shareholding in the Abbey Life Group and, as part of the same transaction, sold a number of subsidiary companies, including Black Horse Life Assurance Company, to the Abbey Life Group. The document circulated to Abbey Life shareholders on 22 October 1988 included an embedded value of the life businesses in the U.K., Ireland and Germany, which incorporated "a prudent valuation of profits expected to emerge in future years" in respect of business in force. The document also included "forecast profits on an embedded value basis for the year ending 31 December 1988", which incorporated "the change in the embedded value of the life companies". The forecasts were reported on by a firm of consulting actuaries. No assumptions were stated. The document also included pro forma information on the enlarged group, which incorporated an embedded value and forecast profits on an embedded value basis in respect of Black Horse Life. Those forecasts were reported on by another firm of consulting actuaries. Similarly the document circulated to Lloyds Bank shareholders on the same date (22 October 1988) included forecast 'embedded value' profits for Black Horse Life and for the enlarged group. Selected material is shown in Appendix 1.

2.2.5 General Portfolio. In 1990 GAN (Groupe des Assurances Nationales) took a majority shareholding in the General Portfolio Group and, as part of the transaction, undertook to purchase further tranches of shares at prices which depend on the appraisal value of General Portfolio at various dates in the future. The directors and merchant bankers of GAN published an 'embedded value' and an "estimated value at issue of the business written in the year", appraised by consulting actuaries, together with a summary of the assumptions used. They also published a formula for the appraisal values to be used in determining the prices at which further tranches of shares would be purchased, a summary of the assumptions to be used for the appraisal values and projections of the appraisal values at various dates. Selected material is shown in Appendix 1.

2.3 There are other circumstances in which appraisal values or embedded values have been published in the U.K.

2.3.1 *Mutualisation.* The most recent mutualisation in the U.K. was that of the Scottish Life Assurance Company in 1967. The senior partner of a firm of consulting actuaries was nominated by the President of the Faculty of Actuaries as an independent actuary to report on the amount which should be offered to shareholders, having regard to the respective interests of shareholders and policyholders. His valuation took into account, *inter alia*, the present value of the shareholders' proportion of estimated future surpluses which would emerge both from existing policies and from estimated new business. Interestingly, a firm of chartered accountants certified the fairness of the method adopted and the assumptions made by the actuary. A copy of the letter from the company Chairman is shown in Appendix 1. No assumptions were stated. An interesting discussion on the actuarial aspects of determining a mutualisation price is contained in the paper by Bangert.[5]

2.3.2 *Demutualisation.* A document dated 18 July 1989, circulated to policyholders of FS Assurance, included a summary of the report by the FS actuary to his directors, which stated that the appraisal value had been determined in two parts: the embedded value and the goodwill value. The embedded value "can reasonably be stated to be £12·25 m" and the goodwill value "has been agreed between FS and Britannia to be £1·75 m". No assumptions were stated in the summary, but were set out in an appendix to the full report, which was available for inspection. An Information Memorandum dated 23 April 1990, issued to policyholders of The National Mutual Life Assurance of Australasia included arrangements whereby the market value of NM U.K. (and other subsidiaries) would be estimated by the independent actuary (i.e. a consulting actuary engaged by the directors), together with the estimated value of each of the next seven years' new business. The arrangements also made provision for the 'actual' value of each year's new business to be determined by the independent actuary at the end of each year and for the excess of the actual value over the value originally estimated to be added to the Future Benefits and Capital Reserve (i.e. for the benefit of policyholders).

2.3.3 *Annual Report and Accounts.* Since 1984 Royal Insurance has published an appraisal value of the life businesses in the Chairman's Statement and a value of the in-force business in the balance sheet. A number of other groups have followed this example in some respects and a survey of the then current practice accompanied the report by the Institute Working Party. The Working Party commented that "a number of companies now disclose the rate at which the future profits are discounted, but only one provides any information on the other assumptions employed in the calculations". The Working Party further commented that "there appears to be a gradual move towards including the change in embedded value in the profit and loss account, rather than crediting it to a non-distributable reserve".

2.3.4 *Flotations.* The prospectus dated 5 June 1985, issued on behalf of the Abbey Life Group, included a statement by consulting actuaries on the adequacy of the actuarial reserves and on the actuarial surpluses of the life businesses. A copy of the relevant letter is shown in Appendix 1. The prospectus document dated 12 September 1986, issued on behalf of the Trustee Savings Banks Central Board, included an appraisal value of the life business appraised by consulting actuaries. A copy of the relevant letter is shown in Appendix 1. No assumptions were stated.

3. TAKEOVER CODE

3.1 The Code[(6)] is issued by the Panel on Takeovers. Its main purpose is to ensure fair and equal treatment of all shareholders in relation to takeovers. The Code does not have the force of law and the Panel has few direct sanctions available to it, but compliance with the Code is imposed on SRO members (and on those authorised through the Institute of Actuaries) and this, in practice, provides a substantial practical incentive for all involved to comply with the Code's various details and general requirements. Failure to do so may, if held to be dishonest, give grounds for criminal prosecution under (*inter alia*) Section 47 of the Financial Services Act.

3.2 The Code is detailed and complex, and we are only able to point out a few relevant features. In particular, rules of special interest are discussed in later sections.

3.3 The Code imposes obligations and places responsibility on the whole board of directors of an offeror company, and, although the board may delegate day-to-day conduct to individual directors or to a committee, the board as a whole must ensure arrangements are in place to enable it to monitor that conduct. These arrangements should, for instance, ensure that the opinions of advisers are available to the board where appropriate. All documents sent to shareholders of the target company are required to carry a responsibility statement, imposing direct personal liability on each director for each such document to the extent that he has failed to take all reasonable care and attention to ensure its truth, accuracy and fairness.

3.4 All documents and advertisements to shareholders must satisfy the highest standards of accuracy, and the information contained in them must be adequately and fairly presented. In particular, General Principle 4 of the Code requires that shareholders be given sufficient information to reach an informed decision and General Principle 6 requires that parties involved take care that statements are not made which may mislead.

3.5 Broadly, the rules (in fact, the Substantial Acquisitions Rules) prevent a buyer, before a takeover offer has been announced, from acquiring shares giving it more than 15% but less than 30% in total of the voting shares of a plc, which is listed either on the Stock Exchange or the USM, from more than one seller within any seven-day period. The Code itself then prohibits (in the contested situation) the offer from going through 30% until after the first closing date of its offer (not less than 21 days after the offer announcement is posted) or, if later, the date when the Secretary of State's decision whether or not to refer the offer to the Monopolies and Mergers Commission is published. The acquisition of 30% or more would trigger a mandatory bid for the rest of the shares under Rule 9 of the Code. The purpose is to slow down the pace at which a person may, in a contested situation, obtain control of a company through market purchases. This gives small shareholders time to participate, if they wish, in any higher price in the shares generated by the increased demand for them. It also gives the management of the company whose shares are being acquired time to consider the position in terms of their shareholders' interests and to take appropriate action before a large shareholder has established or consolidated his position.

4. PUBLIC HISTORY OF THE AMP BID FOR PEARL

4.1 In 1987 AMP acquired a 4·5% stake in Pearl. Following the merger with London Life Association Limited (detailed in § 5.6) at the end of March 1989, this stake increased to 4·8% and on 4 June 1989 AMP acquired FAI's 13·4% stake to bring its holding up to 18·2%. On 2 October 1989 AMP launched an opening £1·1 bn bid at 605p cash per share. Pearl Group Board rejected the offer. On 14 November 1989 Pearl published a defence document showing a 'Combined Valuation' equivalent to 765p per share including an appraisal value of the life business produced by consulting actuaries. The defence document included forecast profits of £130 m, including £120 m of 'adjusted embedded value profits' for the life business. Dividends were increased by 67% over their 1988 level. Extracts from the defence document are shown in Appendix 2. The market price of Pearl shares remained at around 650p per share. On 16 November 1989 AMP increased its offer to £1·3 bn, pitched at 690p per share. Market purchases by AMP at this point increased its holding to about 38%. On 21 November 1989 AMP sent a letter to Pearl shareholders which is reproduced in Appendix 3. On 27 November 1989 AMP purchased a further 8·1 m shares to lift its stake to 44·9%. On 28 November 1989 further purchases by AMP enabled it to lift its stake to over 50%, and hence a controlling interest in Pearl. The compulsory purchase provisions enabling AMP to acquire 100% of Pearl were put into effect on 1 March 1990.

4.2 Throughout the course of the bid the bidder and target acted on the advice of various consultants. In tracking through the detailed process a number of issues came to light which put pressure upon the actuarial advisers on both sides.

5. PREPARATION BY THE BIDDER

5.1 Background factors which caused AMP to consider expansion in the U.K. were:

(a) AMP concluded that it should concentrate on life insurance, its core business.
(b) A saturated and very competitive home Australian market in which, although AMP is the market leader, opportunities for expanding its new business share were limited.
(c) AMP is financially strong and has strong management and business capability. It is well equipped for international expansion.
(d) The possibility of using a U.K. company acquired as a springboard for Europe.
(e) Similarities between the U.K. and Australian life assurance markets.

5.2 Several possible targets, including Pearl, were identified before the start of 1987. By early 1987 approximate valuation of these targets had been commissioned, possible methods of financing devised and discussions held with the DTI to consider the various areas in relation to a U.K. acquisition by AMP and the financing structure involved. The approximate valuation of Pearl at the time gave a value in the range £640 m to £790 m at a time when the market capitalisation was £650 m.

5.3 By May 1987 AMP identified the preferred characteristics for a U.K. acquisition as being:

(a) A financially strong, large well-established company having a with-profits portfolio and large estate. Such a company offered the possibility of having the resources to expand without financial help and being able to assist (subject to the interests of its policyholders being safeguarded) in further acquisitions.

(b) The company should have a large direct sales or home service field force. AMP looked to bring added value through its Australian experience of running both a home service field force and a direct sales force. There would be a ready-made distribution system avoiding the need to set one up.
(c) The target should be perceived to be relatively undynamic. The idea here was that staff and management should be more receptive to new ideas and redirection than in a progressive company and there should be greater prospects for AMP to add value.
(d) The ability to write general business was thought to be useful but not essential.

Attention, therefore, was primarily focused on Pearl.

5.4 Very early on AMP appointed as advisers a leading merchant bank and a leading firm of solicitors.

5.5 A major consideration for AMP was the implication of different levels of holding. The broad position at the time (March, 1989) is summarised in Appendix 4, although some fine detail has been omitted. DTI approval was needed once the holding level reached 15%. The DTI involvement was twofold in that it supervised not only Pearl, but also AMP on behalf of its U.K. branch policyholders. The DTI was concerned, therefore, not only with the implications of change of control for the policyholders of Pearl, but also with the impact of the proposed purchase on the reasonable expectations of the AMP policyholders. The bid vehicle was to be a U.K. subsidiary of AMP, and both this subsidiary as well as AMP itself needed to obtain controller approval.

5.5.1 AMP's U.K. branch business is subject to DTI supervision. Thus AMP itself has to submit DTI returns on a worldwide basis and is subject, again on a worldwide basis, to the asset and liability valuation regulations, including the solvency margin rules. Valuation regulations cover the value of the subsidiary company. The U.K. bid vehicle would be an asset held in AMP's accounts. Its assets and liabilities would be valued according to the valuation regulations. The asset valuation regulations permitted only the value of shareholders' funds of the target company to be included. In other words, the value to shareholders of in-force and future business is excluded. Admissibility limits would also apply within AMP.

5.5.2 On the other hand, the Appointed Actuary of the Pearl and its life insurance subsidiaries needed to satisfy himself that no commitments were made in the defence that would be likely to affect adversely the reasonable expectations of the policyholders of the long-term funds of the group. If Pearl Group had made a traditional profit forecast in respect of its long-term business then the Appointed Actuary would have had to have advised the Board on this matter.

5.6 Pearl does not operate in the high socio-economic market addressed by London Life Association Limited, so when it became apparent in 1988, following the stock market crash in October 1987, that London Life needed further capital for its development plans, AMP proposed a merger with London Life. Although this merger was approved by London Life policyholders in early 1989, AMP's hopes for expansion in the U.K. were still unsatisfied and the possibility of growth through acquisition rather than merger continued to be pursued. The approximate appraisal valuation of Pearl, which was made in early 1987, continued to be updated.

5.6.1 In producing these values, only published information could be used and had shortcomings. The information available was:

(i) Published accounts,
(ii) DTI returns, and
(iii) Published results (new business and profits).

5.6.1.1 Throughout the period the latest Schedule 5 of the DTI returns was at 31 December 1984. This became increasingly out of date, and by the time of the bid did not include the previous four and a half years' business and other movements. Meanwhile there had been significant shifts in the pattern of new business, e.g. increased self-employed and personal pension business and the rise and fall of unit linked business.

5.6.1.2 The new business figures published from time to time were differently defined to those appearing in the DTI returns, and the two could not always be reconciled. From time to time previously published figures would be amended, adding to the uncertainty.

5.6.2 Until October 1987 linked business had been increasing rapidly. The stock market crash reduced linked new business, particularly for single premiums (for the Pearl, the 1988 figure for linked single premiums was less than one third of the 1987 figure). Prior to the crash linked business was seen as an expanding sector of the life assurance market, justifying high goodwill multipliers because of the expectation that there would be further switching from conventional business to linked. Shortly after the crash no difference in multipliers for conventional and linked business seemed justified.

5.6.3 New industrial business had been more or less static for a number of years prior to 1988. In the second half of 1988 it took a pronounced step down, attributed to the effects of the Financial Services Act's requirement that a salesman provide the best product available for the policyholder from the company's range. In general, if an OB policy which is equivalent to an IB policy would give better results it has to be recommended, unless the policyholder has a specific requirement to pay the premiums in cash or four weekly or at a lesser level than is permitted under the OB policy.

5.6.3.1 It was expected that there might be a continuation of the move from IB to OB in future years. Goodwill multipliers, assuming little growth of IB new business in money terms, were used in valuing future IB new business and from early 1989 based on rates of business sold after July 1988.

5.6.4 The introduction of personal pensions posed a number of problems:

(i) The contracts were introduced in July 1988, so there was no history of new business.
(ii) The extent of a possible one-off effect due to the opening up of a new market was extremely difficult to gauge.
(iii) How did DSS rebate only business 'written' tie up with rebates received in amounts and timing?
(iv) To what extent should DSS rebates in future years be anticipated for cases on the books? (i.e. is it repeated single premium business?) This had knock-on effects on the definition of future new business.

5.6.5 General business swung from losses in the mid eighties to a substantial profit in 1988. Provisions had been made following the sale of U.S. business to meet losses on the unexpired risks and contingent liabilities which had to be retained. These factors were difficult to incorporate into a value for the general business.

5.6.6 Assuming that the Pearl continued to write increasing volumes of general business (an assumption made in valuing the general business), it would have to maintain an appropriate level of solvency in respect of that business. Under such an assumption, the solvency margin would not be available for immediate distribution to shareholders, and any value placed on the part of the shareholders' funds represented by the solvency margin would need to take account of the effects of this 'locking-in'. To compete effectively the Pearl might have to maintain more than statutory minimum general business solvency margins so that a higher amount than the minimum might be locked in.

5.6.7 The value to shareholders of an investment derives from the present value of the future dividends which they can expect to receive (and possibly the sale proceeds if the investment is to be sold at a future date). For a life company, dividends are paid out of transfers from the life fund into the shareholders' profit and loss account. The main life subsidiary of the target company wrote substantial volumes of with-profits business, and 10% of distributed surplus goes to shareholders' profit and loss account. Future distributed surpluses depend on the bonus philosophy adopted.

5.6.7.1 Prior to the takeover, there was minimal public knowledge of the Pearl's bonus philosophy. Its recent bonus declaration history of small changes to reversionary bonuses, the occasional special bonus and increases in the unsophisticated terminal bonus scales (a rate per year in force) suggested that only broad equity was being aimed for and that capital appreciation was being distributed largely through the terminal bonus scales.

5.6.8 The Pearl had substantial investment reserves and an 'estate' after providing for current rates of reversionary and terminal bonus. The estate could be distributed in various ways, to existing policies or to new policies, as ordinary reversionary, special reversionary or terminal bonuses and over varying timescales, each leading to a different value being placed on it.

5.6.9 The sensitivity of the valuation to various changes (mainly single changes) in the assumptions was estimated for:

(i) pre-issue discount rate (discount rate pre-issuance of future new business),
(ii) post-issue discount rate (discount rate for in-force business and for future new business post-issue),
(iii) investment return (on equities and property),
(iv) expense levels,
(v) future new business levels and growth rates,
(vi) bonus philosophy (exhaustion of the estate or self-supporting bonuses with distribution of a portion of the estate), and
(vii) treatment of the estate (what part not distributed, use of terminal or reversionary bonuses, over what period).

5.6.10 The expected yields the bidder might expect on various purchase prices were estimated. This meant using a single discount rate for pre- and post-issue of business (rather than a higher pre-issue rate to reflect the higher uncertainties relating to the sale of new business). The bidder could then consider the expected yield at a particular purchase price in relation to its perception of the risk.

5.7 As described in Section 5.5, AMP is supervised by the DTI. It, therefore, needed to show that it could afford the purchase, that it would be a suitable controller of Pearl and that AMP's policyholders' expectations would not be affected. Short-term projections were made of its balance sheet with and without the proposed purchase and with varying levels of borrowing, to show that valuation regulations and minimum solvency requirements could be met, if necessary, after a change in investment conditions.

5.8 A medium-term computer model of the revenue accounts of the Pearl Group and of the assets and liabilities of the life fund was developed at an early stage. The use of this to show the effects of various scenarios on the strength and dividends of the company quickly proved very useful throughout. Appendix 5 explains the construction of this model in more detail and shows sample output.

5.9 Non-financial, non-actuarial matters were investigated with as much vigour as the financial matters. A typical 'wish list', produced by AMP senior management, of matters they would ideally have liked information on, is shown in Appendix 6. Cearly, not all matters could be investigated, but the investigators were able to give senior management of AMP a 'feel' and, hence, a good level of understanding.

6. REGULATORY AUTHORITIES

6.1 The most significant U.K. regulatory authorities involved in a change in control of Pearl were:

(a) DTI,
(b) Takeover Panel,

(c) LAUTRO,
(d) Office of Fair Trading, and
(e) The Institute of London Underwriters (ILU).

Aspects of the involvement of some of these are discussed elsewhere in this paper. Certain overseas regulatory authorities were also potentially involved.

7. MATERIAL FOR THE BID DOCUMENTS

7.1 Extensive background research was carried out on Pearl and its historical performance. This was related to information for the industry as a whole. Key statistics for Pearl included a 5-year record of profits, dividends, premium income, new premium income, staff numbers, long-term funds, shareholders' funds and numbers of in-force policies. Most of these were compared with figures for other larger and/or more successful offices. Recent changes in the new business premiums were compared with changes in industry total figures.

7.1.1 Market share figures were needed for the submission to the OFT, to demonstrate that there would be no anti-competitive effects if the bid succeeded. Market share was interpreted to mean new annual and new single premiums. Figures and rankings were produced, based on ABI statistics and from companies' reports and accounts. Some of these figures were used for statements made in the offer documents showing market shares and growth rates in new business. Resort had to be made to past Companies House microfiches to extract some of this information from old reports and accounts and DTI returns.

7.2 The offer documents needed to show that the offer represented a fair price for the shareholders of Pearl. In the event there was a stage when the target board was rejecting the offer as too low, while some commentators of AMP were complaining that too high a price was being offered.

7.3 The information and assertions made in the offer document and in the OFT submission were subject to stringent verification procedures coordinated by the solicitors involved. Takeover documents have to be prepared to prospectus standards and directors of a company must take responsibility for them. In a contested bid both sides examine the other's documentation with a highly critical eye, and mistakes of fact (or of judgement) can lead to uncomfortable discussions with the Takeover Panel or worse. The verification procedures are used as a formal process of checking that the documents are true and accurate and not misleading.

7.3.1 The process usually involves:

(a) List of questions directed at the various parties involved, designed principally to allocate responsibility appropriately for checking all parts of the document.
(b) Detailed justification for any statements of opinion are requested.
(c) The sources of any figures quoted are sought and a judgement made as to whether sources are sufficiently well regarded to be relied upon.

(d) In the case of figures obtained by, for example, extraction from DTI returns, the fact that consulting actuaries are prepared to put their name to the figures carries some weight.

8. INTERESTING TECHNICAL ASPECTS OF THE APPRAISAL VALUES

8.1 The appraisal valuation produces the opportunity for wide differences in technical approach. Naturally, ours was the viewpoint of the bidder but, nonetheless, the experience of comparing with the target approach showed the extent of possible differences and left open the question of challenge in some circumstances. Some of the significant points of possible differences are worth recording.

8.1.1 The first aspect was locking-in. By locking-in, we refer to the process whereby capital or surplus that has to be retained in the company for a period (e.g. to meet solvency margins) has a value, in principle, less than market value, on the assumption that the discount rate applied to the relevant investment earnings is greater than the net investment yield on the asset. There are arguments as to the relevant discount rate to be applied to investment earnings on such assets, but, in our view, locking-in is a feature that needs to be properly addressed in an appraisal valuation. In the case of the Pearl, where the majority of the value arose from the surplus generated from a with-profits fund, locking-in was not of major importance, but it did feature, particularly in the valuation of the linked subsidiaries of the shareholders' funds and in the valuation of the general business.

8.1.2 The next area was the valuation of the estate. Our approach is that the value which is ascribed to the estate depends upon its assumed use. In a life fund, where surplus is distributed 90/10, as is the case with Pearl, the shareholders can only obtain value from future surplus to the extent that bonuses are declared. The estate can be considered as potentially available both to enhance the bonuses for existing with-profits policyholders, and/or to enhance bonuses for the future with-profits policyholders and as a buffer margin (or general capital). A buffer margin may be required for a number of reasons. Firstly, as working capital; secondly, to meet business contingencies; thirdly, to give the office flexibility to adopt a liberal investment policy, new business policy or bonus policy and, finally, as a margin to demonstrate balance sheet strength. The value of the estate to the shareholders, therefore, depends on the extent to which it is used in the future to declare bonuses to existing or future with-profits policyholders. Any locked-in part of the estate (the buffer margin) has only an implicit value to shareholders (for example, enabling the office to invest more heavily in equity-type investments with a potential advantage in long-term returns). The use of the estate links in directly with the bonus philosophy of the office. Bonus philosophies vary, and, in Appendix 7, we set out examples of bonus philosophies reflected in appraisal value calculations. The first example listed is, in practice, the main approach the second author has encountered in this type of work.

8.1.3 The assumptions in the appraisal calculation include the assumed new business growth rate, the investment return assumptions, expense inflation assumptions and the shareholders' discount rates (both pre-issuance and post-issuance of business). It is useful to develop a coherent, market-sensitive model from which these various assumptions can be derived. In this way, the assumptions can be regarded as market-driven, self-consistent and objectively derived.

8.1.4 The goodwill element in the appraisal value (variously known as existing structure value, blue sky value or simply value of future new business) is of particular interest. To carry out this calculation assumptions have to be made of the volume, profile and profitability of future new business. There are essentially two approaches. Calculations would, in general, be carried out on both approaches and one approach used as a check on the other.

8.1.4.1 The first approach is to determine the discounted value to shareholders of the future business based on assumed or planned volumes, etc., and using the pre-issuance discount rate. Ideally, discussions with management will have taken place regarding its management plans.

8.1.4.2 The second approach, which was used partly as a check on the first, is to apply a multiplier (or multipliers) to a base profitability of one year's new business. The one year's new business would typically be the business written in the year up to the valuation date or that projected to be written in the year following the valuation date, with an adjustment, if necessary, for exceptional new business volumes. The factors affecting the multiplier would, in general, include the historical growth of the business, the security of the distribution channels, market trends for particular areas of business and the general state of the market in insurance company transactions. Currently, companies with secure sales forces or tied outlets are rated more highly than companies relying upon independent intermediaries. A particular aspect of Pearl's business was its IB business, the momentum of which suggested a lower multiplier than its OB business.

8.1.4.3 An example of exceptional new business volumes is DSS rebate business. In the case of Pearl, substantial volumes of this were written in the particular year under consideration. A valuation of DSS rebate business presents particular problems in any appraisal valuation, and in Appendix 8 we examine a number of aspects of this business that need to be taken into account in an appraisal valuation.

8.2 The assumed approach on the use of the estate must be credible in relation to previous and past actions. The reasonable expectations of the policyholders need to be taken into account and, in practice, the bonus philosophy and estate management policy ought to be checked through the office's projection system to ensure that, over a period of time, the philosophy stands up in relation to the business plan and alternative investment scenarios. Clearly, when acting for a bidder, certain assumptions have to be made in this respect and this problem arose in appraising Pearl. However, credibility is the key point here; a sudden change of bonus philosophy at the time of a contested bid might not be regarded as credible nor indeed in accordance with policyholders' reasonable expectations (no such change was intimated by Pearl).

8.3 The sensitivity of the appraisal valuation to changes in assumptions was not included in the defence documents. Clearly, if showing the effects of sensitivities, one would only want to consider the effect of changes in assumptions where these changes made a significant difference to the appraisal valuation. In general, this would be mainly the economic assumptions.

8.4 Our overall conclusion was that, despite the fact that this part of a bid or defence is highly technical, in an actuarial sense, it is also the key feature and capable of much non-actuarial influence or direction. It is a prime area in which the actuary can find himself under challenge, both as to his technical assumptions and the basis for his conclusion. Accordingly, it is an area requiring considerable care and, perhaps, more disclosure than has been the practice. By way of example, in Appendix 9 we indicate an 'ideal' presentation of the actuarial appraisal valuations in defence documents as seen from the bidder's point of view. This 'ideal' presentation was constructed by attempting to relate the spirit of the Takeover Code requirements to life offices. This is a particular area in which the Institute may wish to develop guidelines in conjunction with the Takeover Panel.

9. GENERAL INSURANCE

9.1 The appraisal valuation of general business is well covered in a recent paper by Ryan & Larner.[7] The basic approach that we used when appraising the value of Pearl's general business is described in Appendix 10. Features that need stressing in the bases adopted are the importance of locking-in, the inter-relationship of the value of the shareholders' funds and the consistency of the economic assumptions adopted in the appraisal of the life business.

10. PROFESSIONAL PROBLEMS CAUSED BY TAKEOVER CODE DEFICIENCY

10.1 Insurance companies are not specifically addressed in the Takeover Code, but it is interesting to examine the relevance of particular rules within the Code.

10.2 Rule 28 of the Code relates to profit forecasts.

10.2.1 Rule 28.1 states that a profit forecast must be compiled with scrupulous care and objectivity by the directors whose sole responsibility it is. The financial advisers must satisfy themselves that the forecast has been prepared in this manner by the directors.

10.2.2 Rule 28.2 states that when a profit forecast appears in any document addressed to shareholders in connection with an offer, the assumptions, including the commercial assumptions, upon which the directors have based their profit forecast, must be stated in the document. This raises the question of what constitutes a profit forecast within an actuarial appraisal. Would profit testing or the use of forecast new business in any appraisal calculation (or, indeed, the publication of an appraisal valuation itself) constitute a profit forecast? Clearly, any actuary acting for a target company in these circumstances has to take care to ensure that no inadvertent profit forecast is made in his report and, consequently, through the inclusion of his report in any defence document by the directors.

10.3 Rule 29 of the Code relates to valuations. The rule is primarily concerned with valuations of real property by chartered surveyors. The rule was not written with actuarial valuations in mind and, clearly, the Panel needs to be consulted in any case of doubt about the requirements. The Panel are now demanding a higher level of disclosure of appraisal assumptions than was the case in the past, as was seen in the case of the Pearl, and they may well demand an even greater level of disclosure in the future. This raises the question of whether the Institute of Actuaries should make recommendations to the Panel on this matter or, indeed, issue guidance notes.

10.3.1 Prima facie, public disclosure of bases and assumptions might provide a predator with useful information and thus there would be a tendency for the target company to argue for minimum disclosure, while the predator could attempt to force maximum disclosure of the bases and assumptions, enabling the predator to criticise particular assumptions. On the other hand, it can be argued that clearly stating bases and assumptions gives greater credibility to an appraisal value prepared by the defence and, indeed, disclosure of sensitivities to changes in key assumptions could well add even greater credibility. The appraisal value is less open to general criticism if bases and assumptions are openly, clearly and fully stated.

10.3.2 There is the further issue of the legal liability of the reporting actuary and it could well be argued that a full statement of bases and assumptions gives greater protection to the reporting actuary. There are two situations that need to be considered. If the target company resists a bid successfully, but the business reported upon by the reporting actuary then turns out to be less valuable, existing shareholders, particularly one substantial one, might well seek to sue the reporting actuary. If a bidder raises his bid, having seen the target's appraisal valuation, and his revised bid were successful, but the business turned out to be less valuable, the successful bidder might well attempt to sue the reporting actuary, arguing that it had relied (in part, perhaps) on the report of the actuary.

11. POTENTIAL PROFESSIONAL PROBLEMS WITH THE CLIENT

11.1 The defence actuary might well come under pressure from his client to limit the disclosure of bases and assumptions in such a way as to limit the disclosure of sensitive items. Paragraph 13 of the Memorandum on Professional Conduct and Practice contained in the Members Handbook issued by the Institute of Actuaries, states "The implications of any advice which is given must be explained in suitable terms. A member should include in any report or certificate information, appropriate to the circumstances, as to scope and terms of reference, the assumptions made and methods and data which were used . . .". However, there is a difference between private disclosure to the client and a more public disclosure.

11.1.1 A particular problem is when some items are commercially secret, for example, actual lapse rates. There is a tendency to simply state that regard has been made to recent experience, but how recent and what if there is no recent experience? Some items may be commercially secret but, perhaps, should not be, for example, estate management policy and bonus philosophy of the office. Of course, with the publication of with-profits guides, we should expect to see some of this information openly disclosed. Some items are clearly not secret, such as the assumed returns on gilts and equities.

11.2 In practice, the proceedings tend to be heavily influenced by the merchant banks concerned. The actuary, whether acting for the target or bidder, will be receiving instructions from the merchant bank concerned as well as from his principal. In general, the target company's board of directors and its merchant bank will be keen for their actuary to produce the best possible defence. Attempts might be made to persuade its actuary to give a view which is as optimistic and unreserved as possible. There will be considerable time pressure. In principle, the target (and bidder) company's actuary may take legal advice even though the target (and bidder) company will already be paying fees to its merchant bank, its lawyers, its actuary and, indeed, probably, the merchant bank's own solicitors. We consider it crucial that the actuary, whether acting for the bidder or the target, should instruct a firm of solicitors who should be prepared to give advice should the actuary feel that he needs this advice and needs it quickly.

12. RELATIONS WITH PRESS AND ANALYSTS

12.1 One of the key areas for both the target and the bidder is to influence the opinion formers, in particular, the press and the analysts. It was evident during the bid for Pearl that some sections of the press did not understand the meaning of embedded value or appraisal value and there seems to be a case for the Institute to issue a guidance note, such as that on Pension Fund Terminology, which would help in this process. The majority of the press and analysts seemed to appreciate the relevance of the use of an appraisal value by Pearl, but there were exceptions to this.

12.2 Some sections of the press seemed ready to apply a multiplier to embedded value earnings to derive a benchmark for a suitable valuation. We found this surprising, given that the application of a p/e multiplier to embedded value profits is surely not yet an accepted approach. The late conversion to embedded values also came in for comment and was reflected in analysts' comments in particular.

12.3 Paragraph 12 of the Memorandum of Professional Conduct and Practice in the Members Handbook states, "For a member in a particular situation to describe the advice he offers as independent he must be free . . . of any influence which might affect his advice or limit its scope". Although neither firm of actuaries involved in the bid described themselves as independent, this did not stop some of the press from referring to the target's actuaries as independent. Clearly some advantage could be seen as arising from the description of the actuary's advice as being independent, but what does that mean in a practical situation where respective actuaries are retained by one party only? Within a framework of closely negotiating parties the situation is no doubt understood and accepted, but, once it is extended to the broader field of the general public or shareholders, the issue becomes much less clear. In these circumstances there is the risk that the profession generally and its standards will come under question.

12.4 Some sections of the press emphasised the Australian aspect of the bid and referred to predatory activity by Australian firms and individuals outside the insurance arena.

13. CONCLUSIONS

13.1 Having lived through the extensive preparation involved prior to the bid and the hectic activity of the bid itself, we have had time to reflect on a number of issues.

13.2 The first question is do actuaries and stockbrokers value insurance companies in the same way? What drives the market? Most fund managers would currently regard a long-term rate of return of 12·5% p.a. (gross) as quite conservative. Actuaries, on the other hand, think it quite high. Obviously, there will also be compensating differences on discount rates.

13.3 Should discount rates be used at all? Should the defending actuary simply produce a few projections on a few bases and leave the assessment up to the analysts? Would the Takeover Code rules on profit forecasts inhibit such an approach? Obviously, the valuation of the emerging dividends brings into question the whole area of dividend forecasts, in which actuaries and actuarial techniques can play a major part. This was particularly important in the case of the Pearl, where the defence included a significant announced increase in dividends, which raised questions regarding maintainability in the future of the historic dividend growth rates.

13.4 A further development is the possibility of publishing, in some detail, appraisal valuations for general business, using techniques similar to those used for life businesses. This raises the questions of what assumptions should be disclosed.

13.5 There is the further possibility of a bidder publishing an appraisal valuation of embedded value earnings or long-term dividend forecast made by a firm of actuaries but based only on publicly available information.

13.6 These are all considerations for the future, but we would comment that the value of an insurance company is very much more than that emanating from the value of the figures. The valuation of a company is very dependent upon its culture, management, staff, image and the likelihood that it will continue to obtain new business and maintain its existing policyholders as well as the attraction of such facets to potential purchasers.

13.7 As appraisal and embedded values become increasingly more widely used, the actuarial assumptions upon which they are based will come under increasing scrutiny and challenge. The actuary will no longer be able to retreat and hide under the cloak of professional judgement, but will be called upon to justify his assumptions. This increasing exposure will have two important effects: it will place a greater requirement on the actuary to provide justification for all of the assumptions he uses and it will increase the risk of challenge, including, in the extreme, legal action.

13.8 Finally, there is a matter of particular importance to the parties in a takeover who have no franchise: the policyholders of a target company. These policyholders will have been considered by the DTI, who would seek assurances from the bidder for the protection of the rights and reasonable expectations of these policyholders. They will also have been considered by a target's Appointed Actuary. Nevertheless, the Takeover Code does not consider them and no public assurance as to their future wellbeing is required. In view of the key role of policyholders in the continuation of the business and, in cases such as Pearl, their dominant financial position in the business, the actuary has a special role in their future. In the case of a formal merger that role is well demonstrated and arrangements have to comply with conditions to the satisfaction of the Courts. In the case of a takeover the expectations of the continuing policyholders rely on the new owners. As such circumstances appear to place particular responsibility upon the actuary, the Institute might wish to consider whether guidelines for the Appointed Actuary and adviser to the bidder are appropriate, whether some reference to the position should be included in the Takeover Rules and the degree of publicity the position of policyholders should receive.

ACKNOWLEDGEMENTS

We would like to thank those colleagues who have assisted us with this paper and have made helpful comments. Particular thanks go to Alasdair Brown, Harold Clarke, Howard Froggatt, Jan Kamieniecki and Derek Pike. However, the views expressed in this paper are ultimately our own.

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APPENDIX 1

SELECTED MATERIAL FROM OTHER CASES

A.1.1 EAGLE STAR HOLDINGS PLC

NET ASSET VALUE AND PROFIT FORECAST OF EAGLE STAR

1 Net Asset Value

The Board of Eagle Star and its advisers, Hill Samuel & Co. Limited, have carried out a review of the values which can be attributed to the various major assets of the Eagle Star Group. Whilst it is not possible to place precise values on certain assets, some of which would almost certainly have special appeal to particular purchasers, the Board of Eagle Star and its advisers, supported by Tillinghast, Nelson & Warren Ltd. in relation to the value of the shareholders' interests in the life assurance business of the Eagle Star Group, are of the opinion that, on the bases indicated below, the net asset value of the Eagle Star Group as at 30 September 1983 was not less than 800p per share.

The foregoing opinion takes no account of the contingent tax liability which might arise from the possible future disposal of any assets and assumes a going concern basis.

2 General Business Investments

Investments attributable to shareholders' funds, with the exception of Grovewood and its subsidiaries, have been valued as at 30 September 1983 on the following basis:

(a) listed investments have been included at mid-market values or the equivalent thereof for securities listed other than on The Stock Exchange;
(b) unlisted investments have been included at valuations which accord with the relevant provisions of The Insurance Companies Regulations 1981; and
(c) properties have been included at their open market values, which accords with the basis set out in The Insurance Companies Regulations 1981, except that no deduction has been made for expenses of sale. These valuations have been carried out by the Eagle Star Group's internal valuers, who are qualified valuers within the meaning of the said regulations.

3 Life Assurance Business In connection with the value of the shareholders' interests in the life assurance business of the Eagle Star Group, the Board of Eagle Star has received the following letter from Tillinghast, Nelson & Warren Ltd., consultants:

The Directors,
Eagle Star Holdings PLC,
1 Threadneedle Street,
London EC2R 8BE

5 Theobalds Road,
London WC1X 8SH

14 November 1983

Dear Sirs,

As instructed we have appraised the value, on a going concern basis, of the following:

(i) The Ordinary Long-Term Business Funds of Eagle Star Insurance Company Limited and of Eagle Pension Funds Limited.
(ii) The Long-Term Business Funds of Australian Eagle Insurance Company Limited.
(iii) Shield Life Insurance Company Limited.

In our appraisal we proceeded by considering the following elements of value:

(i) Existing business, being business already on the books of the company.
(ii) Shareholders' assets and other related inner reserves not reflected in the published balance sheets prepared under Insurance Companies and Companies Act legislation.
(iii) Goodwill or 'existing structure value' being the companies proven ability to make profitable use of their assets as evidenced by continuing new business sold on profitable terms.

In performing our appraisal we paid particular attention to the effect of tax on the various elements of value; in each case the values attributed are net of all taxes likely to be borne within the companies.
The values appraised as at 30 September 1983 are:

(i) The Ordinary Long-Term Business Funds of Eagle Star Insurance Company Limited and of Eagle Pension Funds Limited	£375,000,000
(ii) 100% of the Long-Term Business Funds of Australian Eagle Insurance Company Limited	A$50,000,000
(iii) 100% of Shield Life Insurance Company Limited	IR£10,000,000

Our work has been based on audited and unaudited information supplied to us as at 31 December 1982 together with unaudited information on events since that date. We did not carry out detailed checks of the data and other information supplied to us by the companies.

Yours faithfully,

For TILLINGHAST, NELSON & WARREN LTD.
I. C. Smart, F.I.A.
Director

A.1.2 PHOENIX ASSURANCE PLC

ESTIMATE OF THE NET ASSET VALUE OF PHOENIX

1 Net Asset Value

The Directors of Phoenix and Phoenix's advisors, Hambros, have carried out a review of the estimated values which can be attributed to the various major assets of the Phoenix group. Whilst it is not possible to place precise values on certain assets, the Board of Phoenix and its advisers supported by Tillinghast, Nelson & Warren Ltd. ('Tillinghast'), Consulting Actuaries, in relation to an estimate of the value of the shareholders' interest in the principal life assurance businesses of the Phoenix group, are of the opinion that on the bases set out below, the estimated net asset value of the Phoenix group as at 30 June 1984 was between £464 million and £493 million, equivalent to between 760p and 808p per share.

2 Bases of Valuation

The estimate of net asset value is made on the following bases:

(i) *General Business*
At 31 December 1983, the audited consolidated balance sheet disclosed shareholders' interests net of minority interests in subsidiaries of £346 million. The investment assets included in the balance sheet at that date have been adjusted on a pro-forma basis for movements in the relevant underlying stock market equity and fixed interest indices and for the movement in exchange rates between 31 December 1983 and 30 June 1984. Other assets and liabilities have been adjusted for exchange rate movements only.

(ii) *Long-term Business*

(a) The shareholders' interest in the long-term business of Phoenix, Ebor Phoenix Assurance Company Limited, Property Growth Assurance Company Limited and Property Growth Pensions and Annuities Limited has been estimated at 30 June 1984 by Tillinghast to be between £143 million and £172 million. A copy of Tillinghast's letter is set out below.

(b) No detailed valuation has been carried out of the shareholders' interest in the long-term business of Phoenix's overseas subsidiaries the value of which is not considered significant in relation to the total assets of the Phoenix group. For the purposes of the estimate of the net asset value of the Phoenix group, a value of £10 million has been ascribed to these interests.

(iii) *Retained Profits*
No adjustment has been made for the movement in retained profits arising from profits or losses accruing since 1 January 1984.

(iv) *Contingent Tax Liability*
No account has been taken of the contingent tax liability which might arise from the possible future disposal of any assets other than in respect of long-term insurance business.

3 Letters

(a) The Directors of Phoenix have received the following letter from Tillinghast in connection with the estimate of the shareholders' interest in the long-term business of Phoenix:

5 Theobalds Road,
London WC1X 8SH

The Directors,
Phoenix Assurance plc,
Phoenix House,
18 King William Street,
London EC4N 7ER

23 July 1984

Gentlemen,

As instructed we have endeavoured to place a value, on a going concern basis, on the shareholders' interest in the following:

(i) The Ordinary Long-Term Business Fund of Phoenix Assurance plc.
(ii) Ebor Phoenix Assurance Company Limited.
(iii) Property Growth Assurance Company Limited and Property Growth Pensions and Annuities Limited.

In our appraisal we considered the following elements of value:

(i) Shareholders' assets and inner reserves, attributable to shareholders, not reflected in the published balance sheets prepared under Insurance Companies Act legislation.
(ii) Existing business already on the books of the Companies.
(iii) Goodwill or 'existing structure value' being the Companies' proven ability to make profitable use of their assets as evidenced by new business sold on profitable terms.

In each case the values attributed are net of all taxes likely to be borne within the Companies.

The values appraised as at 30 June 1984 are:

(i) Phoenix and Ebor Phoenix	£125–150 million
(ii) Property Growth and Property Growth Pensions	£18–22 million

In view of the limited time available and the limited amount of information that could be made available to us, we have found it impossible to be more precise in our appraisal valuation.

Our work has been based on audited and unaudited information as at 31 December 1983 together with some information on events since that date. We did not carry out any checks on the data and other information supplied to us by the Companies.

Yours faithfully,

N. A. M. Franklin, F.F.A.

For TILLINGHAST, NELSON & WARREN LTD.

A.1.3 LLOYDS BANK/ABBEY LIFE GROUP

REPORTING ACTUARIES' REPORT

The following is a copy of a report to the directors respectively of Abbey Life Group plc, ITT Corporation and S. G. Warburg & Co. Ltd. from Tillinghast, Nelson & Warren Ltd., the Reporting Actuaries:

The Directors,
Abbey Life Group plc

and

The Directors,
ITT Corporation

and

The Directors,
S. G. Warburg & Co. Ltd.

Chesterfield House,
15–19 Bloomsbury Way,
London WC1A 2TP

5 June 1985

Gentlemen,

We have examined the actuarial reserves of Abbey Life Assurance Company Limited ('Abbey Life Assurance'), Abbey Life Pension and Annuities Limited ('ALPA'), Ambassador Life Assurance Company Limited ('Ambassador') and Abbey Life Assurance (Ireland) Limited ('Abbey Ireland') as shown in their annual returns to their respective supervisory authorities as at 31 December 1984. The actuarial bases on which the reserves have been calculated are set out in the returns and include assumptions as to future interest rates, unit fund growth rates, mortality, morbidity and expenses.

For Abbey Life Assurance, ALPA and Ambassador (the 'UK life insurance companies'), regulations are laid down in the Insurance Companies Regulations 1981 (the 'Regulations') governing the principles to be adopted in determining the amount of long-term business liabilities. We have reviewed the actuarial reserve bases adopted for the U.K. life insurance companies against the requirements of Regulations 55–64, including our interpretation of those regulations where they do not deal specifically with unit-linked business. We are of the opinion that, overall, the actuarial reserve bases are adequate having regard to Regulations 55–64 and we are satisfied with the calculated results.

For Abbey Ireland, no regulations governing the principles to be adopted in determining the amount of long-term business liabilities yet apply. However, for consistency, we reviewed the actuarial reserve bases adopted against draft regulations (the 'Draft Regulations') issued by the Department of Industry, Trade, Commerce and Tourism of the Republic of Ireland, including our interpretation of these Draft Regulations where they do not deal specifically with unit-linked business. We are of the opinion that, overall, the actuarial reserve bases are adequate having regard to Draft Regulations 5–15 and we are satisfied with the calculated results.

Our investigations in relation to the U.K. life insurance companies and Abbey Ireland did not cover policy data or assets which were subject to review by Ernst & Whinney, the Auditors and Reporting Accountants, in the course of their audits for the five years ended 31 December 1984.

Transatlantische Lebensversicherungs AG ('Trans Life'), which is incorporated in the Federal Republic of Germany, has actuarial reserve bases laid down by German law. Trans Life's actuary has certified that its actuarial reserves at 31 December 1984 are computed in accordance with the law. Trans Life's auditors, Arthur Andersen & Co. GmbH, performed appropriate audit procedures and concluded that there was compliance with both the law and the company's statutes at 31 December 1984. Consequently we did not include Trans Life in our investigations.

The comparison of the actuarial reserves of each of the U.K. life insurance companies with their life funds, as shown in their returns to the Department of Trade and Industry as at 31 December 1984, results in actuarial surpluses and reserves held towards solvency margins at 31 December 1984 as follows:

Company	Life funds	Actuarial reserves	Cumulative surplus plus solvency margin reserves	Cumulative surplus
	£000	£000	£000	£000
Abbey Life Assurance	1,518,787	1,424,694	94,093	81,645
ALPA	187,400	184,800	2,600	2,600
Ambassador	29,605	28,301	1,304	1,304
	1,735,792	1,637,795	97,997	85,549

The cumulative surplus as at 31 December 1984 has been stated after profit and loss account transfers, including a transfer of £9 million to profit and loss account by Abbey Life Assurance from the surplus in its life fund at the end of 1984.

The descriptions of the actuarial reserve bases given in the statutory returns of the U.K. life insurance companies for the years 1980 to 1984 show some changes from year to year, although the approaches shown in those descriptions have been generally consistent. We have made such adjustments as we deemed appropriate—within the framework of the Regulations—to the actuarial reserve bases and the asset values of the U.K. life insurance companies for the years ended 31 December 1979 to 31 December 1983 to make these bases and values consistent with the bases and values used at 31 December 1984.

The total reported annual actuarial surpluses of the U.K. life insurance companies before adjustments and the effect on surpluses of the adjustments we have made are fully described in our statement of adjustments. The adjustments made do not affect the cumulative actuarial surpluses as at 31 December 1984.

The resulting adjusted annual actuarial surpluses are shown in the table below:

U.K. life insurance companies
Adjusted annual actuarial surplus

Year	£m
1980	8·3
1981	10·1
1982	15·6
1983	20·8
1984	30·6

The initial actuarial strains and other development costs of Trans Life and Abbey Ireland are being funded by Abbey Life Group plc and are carried at cost in its consolidated balance sheet at 31 December 1984.

Yours faithfully,

I. C. Smart, F.I.A.

TILLINGHAST, NELSON & WARREN LTD.

Consultants and Actuaries

PROFIT FORECAST FOR THE 5 LLOYDS BANK BUSINESSES

(1) Profit forecast for the 5 Lloyds Bank businesses

(a) *Profit forecast*

The directors of Lloyds Bank forecast that, in the absence of unforeseen circumstances and on the bases and assumptions set out in paragraphs (b) and (c) below, the 5 Lloyds Bank businesses' combined pre-tax and post-tax profits for the year ending 31 December 1988 will be not less than £166·1 million and £111·5 million respectively (before deducting profits after taxation attributable to minority interests of £2·8 million). The forecast comprises:

	Pre-tax £m	Post-tax £m
Black Horse Life ('embedded value' basis)	35·1	25·4
Lloyds Bowmaker	83·0	55·0
Black Horse Agencies	18·0	11·5
LBIS	29·0	18·9
LBUTM	1·0	0·7
	166·1	111·5

The 1988 profit forecast excludes the invoice factoring subsidiaries of Lloyds Bowmaker which were recently transferred to Lloyds Bank and takes account of the availability of funding of up to £900 million at 9% per annum provided by Lloyds Bank on 10 October 1988.

(b) *Bases of preparation*

The forecast combined profits of the 5 Lloyds Bank businesses for the year ending 31 December 1988 comprise:

(a) the combined profits of Lloyds Bowmaker, Black Horse Agencies, LBIS and LBUTM using the accounting policies set out in the Accountants' report in Appendix I of this circular; together with

(b) the change in the 'embedded value' of Black Horse Life after adjusting for changes in capital. 'Embedded value' comprises the net worth of the company (being the net tangible assets plus surplus retained in the long-term assurance fund) plus the value of long-term assurance business in force (being a prudent valuation of profits expected to emerge in future years).

The forecast of the combined profits of the 5 Lloyds Bank businesses for the year ending 31 December 1988 has been made by the directors of Lloyds Bank:

(i) having regard to the income and expenditure as shown in the management accounts of the 5 Lloyds Bank businesses for the 8 months ended 31 August 1988;

(ii) on the basis of projections of income and expenditure, including the effect of new business, for the remainder of the year ending 31 December 1988; and

(iii) after projecting actuarial reserves and the change in the 'embedded value' of long-term assurance business using actuarial bases consistent with those adopted in the accounts of the Lloyds Bank Group in 1987.

(c) *Assumptions*

The principal assumptions adopted in making the combined profit forecast for the year ending 31 December 1988 are that, for the remainder of the year:

(i) there will be no significant changes in the current operations of the 5 Lloyds Bank businesses;

(ii) there will be no significant changes in interest rates compared to those currently prevailing;

(iii) there will be no significant changes in governmental or other regulations, including taxation, affecting the 5 Lloyds Bank businesses. In particular no account has been taken of possible changes in the tax regime applicable to life assurance companies discussed in the Consultative Document on the taxation of life assurance companies issued by the Inland Revenue on 17 June 1988; and

(iv) there will be no significant changes in investment conditions or in the general levels of economic activity and stock market values currently prevailing.

(2) *Letters*

(A) Letter from Bacon & Woodrow

The Directors,
Lloyds Bank Plc,
71 Lombard Street,
London EC3P 3BS

Empire House,
St. Martin's-le-Grand,
London EC1A 4ED

22 October 1988

The Directors,
Lloyds Merchant Bank Limited,
40–66 Queen Victoria Street,
London EC4P 4EL

Gentlemen,

We have reviewed the forecast 'embedded value' profits of Black Horse Life Assurance Company Limited for the year ending 31 December 1988, included in the Directors' profit forecast, set out in the circular to Lloyds Bank shareholders dated 22 October 1988, which has been made on the bases and assumptions set out in that circular. The Directors are solely responsible for the forecast and the assumptions upon which it has been made.

In our opinion the forecast of the 'embedded value' profits of Black Horse Life Assurance Company Limited for the year ending 31 December 1988, so far as the actuarial bases and calculations are concerned, has been properly compiled on the basis of the assumptions made by the Directors.

The actuarial bases used in projecting the actuarial reserves at 31 December 1988 are consistent with those used at 30 September 1987 and the Directors' assumptions appear to us to be reasonable.

Yours faithfully,

BACON & WOODROW
Consulting Actuaries

(B) Letter from Price Waterhouse

The Directors,
Lloyds Bank Plc,
71 Lombard Street,
London EC3P 3BS

Southwark Towers,
32 London Bridge Street,
London SE1 9SY

22 October 1988

The Directors,
Lloyds Merchant Bank Limited,
40–66 Queen Victoria Street,
London EC4P 4EL

Gentlemen,

We have reviewed the accounting policies and calculations for the forecasts of combined profits before and after taxation ('the combined profit forecasts') for Lloyds Bowmaker Finance Limited and its subsidiaries and associated companies, Black Horse Agencies Limited and its subsidiaries, Black Horse Life Assurance Company Limited, Lloyds Bank Unit Trust Managers Limited and its subsidiary and Lloyds Bank Insurance Services Limited for the year ending 31 December 1988 set out on page 26 of the circular to shareholders dated 22 October 1988 ('the circular'). The forecasts, for which the Directors of Lloyds Bank Plc are solely responsible, include results shown by the unaudited management accounts for the eight months ended 31 August 1988.

The combined profit forecasts include the forecast change in the embedded value of the long-term assurance business of Black Horse Life Assurance Company Limited for the year ending 31 December 1988 which has been the subject of a separate letter by Bacon & Woodrow, consulting actuaries, a copy of which is set out on pages 26 and 27 of the circular. We have reviewed the accounting bases and the underlying accounting data used in the calculation of the change in the embedded value of the long-term assurance business but have not reviewed the actuarial bases, assumptions and calculations.

In our opinion the combined profit forecasts, so far as the accounting policies and calculations are concerned, have been properly compiled on the footing of the assumptions made by the Directors set out on page 26 of the circular and are presented on a basis consistent with the accounting policies normally adopted by the Lloyds Bank Group.

Yours faithfully,

PRICE WATERHOUSE
Chartered Accountants

(C) Letter from Lloyds Merchant Bank Limited

The Directors,
Lloyds Bank Plc,
71 Lombard Street,
London EC3P 3BS

40–66 Queen Victoria Street,
London EC4P 4EL

22 October 1988

Gentlemen,

We have discussed with you and with Price Waterhouse the combined profit forecast for Lloyds Bowmaker Finance Limited and its subsidiaries and associated companies, Black Horse Agencies Limited and its subsidiaries, Black Horse Life Assurance Company Limited, Lloyds Bank Unit Trust Managers Limited and its subsidiary and Lloyds Bank Insurance Services Limited for the year ending 31 December 1988, and with you, Price Waterhouse and Bacon & Woodrow the forecast 'embedded value' earnings of Black Horse Life Assurance Company Limited for the year ending 31 December 1988 as set out in the circular to shareholders dated 22 October, in each case together with the bases and assumptions on which the forecasts are made. We consider that these forecasts, for which you, as Directors, are solely responsible, have been made after due and careful enquiry.

Yours faithfully,
For LLOYDS MERCHANT BANK LIMITED
D. O. Horne
Chairman and Chief Executive

(D) The Directors of Abbey Life have received the following letters from Tillinghast, Nelson & Warren Ltd., Ernst & Whinney, S. G. Warburg & Co. Ltd., Bacon & Woodrow, Price Waterhouse and Lloyds Merchant Bank Limited, in connection with the profit forecasts:

(i) Letter from Tillinghast, Nelson & Warren Ltd.

The Directors,
Abbey Life Group plc

The Directors,
S. G. Warburg & Co. Ltd.

Castlewood House,
77–91 New Oxford Street,
London WC1A 1PX

22 October 1988

Gentlemen,

We have reviewed the forecast pre tax and post tax surplus arising in Abbey Life Assurance Company Limited, Abbey Life Pension and Annuities Limited and Ambassador Life Assurance Company Limited (together the 'U.K. life assurance companies') and the forecast pre tax and post tax embedded value profits of the U.K. life assurance companies, Abbey Life Assurance (Ireland) Limited and Transatlantische Lebensversicherungs AG (together the 'life assurance companies') for the year ending 31 December 1988, included in the Directors' forecasts of the profits of Abbey Life Group plc and its subsidiaries for that year, which has been made on the bases and assumptions set out in the circular to shareholders dated 22 October 1988. The Directors are solely responsible for the forecasts and the assumptions upon which the forecasts have been made.

We are of the opinion that the forecasts of the pre tax and post tax surplus arising in the U.K. life assurance companies and the forecasts of the pre tax and post tax embedded value profits of the life assurance companies for the year ending 31 December 1988, so far as the actuarial bases and calculations are concerned, have been properly compiled on the bases and assumptions made by the Directors and have been compiled in a manner consistent with those adopted in producing the equivalent figures for 1987.

The actuarial bases used in projecting the actuarial reserves at 31 December 1988 are consistent with those adopted to produce the equivalent figures for 1987 and the Directors' assumptions appear to us to be reasonable.

Yours faithfully,

I. C. Smart, F.I.A.

TILLINGHAST, NELSON & WARREN LTD.

Consultants and Actuaries

(ii) Letter from Ernst & Whinney

The Directors,
Abbey Life Group plc

The Directors,
S. G. Warburg & Co. Ltd.

Becket House,
1 Lambeth Palace Road,
London SE1 7EU

22 October 1988

Gentlemen,

We refer to the forecast profits before and after taxation on both a surplus arising and an embedded value basis of Abbey Life Group plc and its subsidiaries (the 'Abbey Life Group') for the year ending 31 December 1988 (the 'profit forecasts'). The profit forecasts have been prepared by the Directors having regard to sales and expenses as shown in the Abbey Life Group's unaudited management accounts for the 8 months ended 25 August 1988, together with projections for the remainder of 1988.

The forecast profits before and after taxation on a surplus arising basis include the forecast surplus arising of Abbey Life Assurance Company Limited, Abbey Life Pension and Annuities Limited and Ambassador Life Assurance Company Limited (together the 'U.K. life assurance companies'). The forecast profits before and after taxation on an embedded value basis include the forecast embedded value profits of the U.K. life assurance companies together with those of Abbey Life Assurance (Ireland) Limited and Transatlantische Lebensversicherungs AG (together the 'life assurance companies').

We have not reviewed the forecast surplus arising of the U.K. life assurance companies nor the forecast embedded value profit of the life assurance companies for the year ending 31 December 1988 which have been the subject of a separate letter from Tillinghast, Nelson & Warren Ltd. We have reviewed the bases and calculations underlying the accounting data used in the calculations thereof but not the actuarial bases, assumptions and calculations.

We have reviewed the accounting policies and calculations adopted in arriving at the profit forecasts for which the Directors are solely responsible. In our opinion, the profit forecasts so far as the accounting policies and calculations are concerned, have been properly compiled on the bases and assumptions made by the Directors as set out in the circular to shareholders dated 22 October 1988, and, with the exception of the change to the embedded value method of accounting, are presented on a basis consistent with the accounting policies normally adopted by the Abbey Life Group.

Yours faithfully,

ERNST & WHINNEY
Chartered Accountants

(iii) Letter from S. G. Warburg & Co. Ltd.

The Directors,
Abbey Life Group plc

33 King William Street,
London EC4R 9AS

22 October 1988

Gentlemen,

We have discussed with you, Tillinghast, Nelson & Warren Ltd., consulting actuaries, and Ernst & Whinney, auditors to Abbey Life Group plc, the forecast embedded value profit before and after taxation and the forecast surplus arising before and after taxation (the 'profit forecasts') of Abbey Life Group plc for the year ending 31 December 1988 as set out in the circular to shareholders dated 22 October 1988, in each case together with the bases and assumptions on which the profit forecasts are made.

We consider that the profit forecasts, for which the Directors are solely responsible, have been made after due and careful enquiry.

Yours faithfully,
For S. G. WARBURG & CO. LTD.
J. R. S. BOAS
Director

(iv) Letter from Bacon & Woodrow

The Directors,
Abbey Life Group plc

The Directors,
S. G. Warburg & Co. Ltd.

Empire House,
St. Martin's-le-Grand,
London EC1A 4ED

22 October 1988

Gentlemen,

We have reviewed the estimated deficit arising for the year ended 30 September 1988 (the 'estimate') and the forecast pre tax and post tax embedded value profits for the year ending 31 December 1988 (the 'forecast') of Black Horse Life Assurance Company Limited included in the section headed 'Profit forecasts for the Five Lloyds Bank Businesses', set out in part 4 of the circular to Abbey Life Group plc shareholders dated 22 October 1988, which have been made on the bases and assumptions set out in that circular. The Directors of Lloyds Bank Plc are solely responsible for the estimate, the forecast and the assumptions upon which they have been made.

In our opinion the estimate and the forecast for Black Horse Life Assurance Company Limited so far as the actuarial bases and calculations are concerned, have been properly compiled in a manner consistent with 1987 on the basis of the assumptions made by the Directors of Lloyds Bank Plc.

The actuarial bases used in projecting the actuarial reserves are consistent with those used in 1987 and the assumptions made by the Directors of Lloyds Bank Plc appear to us to be reasonable.

Yours faithfully,

BACON & WOODROW
Consulting Actuaries

(v) Letter from Price Waterhouse

The Directors,
Abbey Life Group plc

The Directors,
S. G. Warburg & Co. Ltd.

Southwark Towers,
32 London Bridge Street,
London SE1 9SY

22 October 1988

Gentlemen,

We have reviewed the accounting policies and calculations for the forecasts of combined profits before and after taxation (the 'combined profit forecasts') for Lloyds Bowmaker Finance Limited and its subsidiaries and its associated companies, Black Horse Agencies Limited and its subsidiaries, Black Horse Life Assurance Company Limited, Lloyds Bank Unit Trust Managers Limited and its subsidiary and Lloyds Bank Insurance Services Limited for the year ending 31 December 1988 set out in part 4 of the circular to shareholders dated 22 October 1988 ('the circular'). The forecasts, for which the Directors of Lloyds Bank Plc are solely responsible, include results shown by the unaudited management accounts for the eight months ended 31 August 1988.

The combined profit forecasts include the forecast change in the embedded value of the long term assurance business of Black Horse Life Assurance Company Limited for the year ending 31 December 1988 which has been the subject of a separate letter from Bacon & Woodrow, consulting actuaries, a copy of which is set out in part 4 of the circular. We have reviewed the accounting bases and the underlying accounting data used in the calculation of the change in the embedded value of the long-term assurance business but have not reviewed the actuarial bases, assumptions and calculations.

In our opinion the combined profit forecasts, so far as the accounting policies and calculations are concerned, have been properly compiled on the footing of the assumptions made by the Directors of Lloyds Bank Plc set out in part 4 of the circular and are presented on a basis consistent with the accounting policies normally adopted by the Lloyds Bank Group.

Yours faithfully,

PRICE WATERHOUSE
Chartered Accountants

A.1.4 GENERAL PORTFOLIO GROUP

DETAILS OF PROJECTIONS AND ASSUMPTIONS

ACTUARIES' REPORT

The Directors,
GAN International,
2 Rue Pillet-Will,
Paris, 09

Bacon & Woodrow,
St Olaf House,
London Bridge City,
London SE1 2PE

28 December 1989

Gentlemen,

We have, on your instructions, projected possible values per share of the General Portfolio Group PLC ('GPG') using the method of calculation described in Section 3(ii) of Appendix I to the Offer Document (the 'Calculation Method').

We have in our report to you dated 29 August 1989 calculated as at 30 June 1989, *inter alia*, the value of new business, the combined value of existing business and shareholders' funds of General Portfolio Life Insurance PLC ('GPLI'), and the value of GPG and subsidiaries other than GPLI. From that report, the 'Embedded Value' of GPG as at 30 June 1989 (using the Calculation Method) is derived to be £66·5 million after allowing for the capitalised value of possible future losses within the group. In that report the estimated value at issue of the business written in the year to 30 June 1989, referred to in 2(a) below, was shown to be £19·9 million.

Our report dated 29 August 1989 and supporting documents are available for inspection.

1. GPG AS AT 30 JUNE 1989

Assumptions for the calculation of the value of new and existing business

The most important assumptions made in our calculations were:

(i) An after tax shareholders' risk rate of discount of 15% per annum for business in force at 30 June 1988 and 16% per annum for new business after policies have been sold.
(ii) The availability of future capital and/or reinsurance financing.
(iii) A net interest rate payable by GPLI on reinsurance financing equal to the shareholders' risk discount rates in (i) above.
(iv) A rate of growth for the unit-linked funds, before charges, of between 10 and 11% per annum gross.
(v) Initial expenses incurred in writing new business of approximately 26% of the annualised premium for the 'Protected Rights' element of Private Wealth Plan ('PWP/DSS' contracts), approximately 57% of the annua-

lised premium for other regular premium contracts and 2·2% of single premiums.

Renewal expenses of £12 per annum (£6 per annum for single premium contracts) and a rate of renewal expense inflation of between 6 and $6\frac{1}{2}$% per annum.

Commission was incorporated on current scales.

(vi) Tax relief on initial expenses at the rate of 10%.

(vii) *Lapse rates*
The lapse assumptions were based on the past experience of GPLI where available and lapse rates considered to be appropriate to the GPLI direct sales force otherwise.

(viii) The unmortgaged excess expenses have been valued at 15% of the total amount.

(ix) With regard to taxation we have allowed for normal '*I–E*' tax on life assurance business, but have not allowed for the effect of the possibility of Notional Case I tax (in excess of '*I–E*') which would have the effect of increasing immediate tax but also increasing the amount of unrelieved management expenses. We have however allowed for changes in the 1989 Finance Act by (a) assuming a tax rate on shareholders' profits of 32% for business in force at 30 June 1988, and 35% for new business, and (b) by using the rate of 10% for tax relief on initial expenses as in (vi) above.

(x) *Premium Increases*
For the low start version of the Homemaker we have assumed that the contractual premium increases of 20% per annum simple for five years will be paid in full. On the Variable Investment Programme where although there are contractual premium increases of 10% per annum we assumed a take up rate of 85% in view of GPLI's intentions on enforcing such increases. For those products where the policyholder has the option to increase premiums in line with inflation and for the PWP/DSS contracts we assumed that premiums would increase at the rate of 4·25% per annum.

(xi) The statutory reserving basis as at 30 June 1989 was assumed to continue, except that it was assumed that negative sterling reserves would be eliminated.

2. PROJECTION ASSUMPTIONS FOR GPG 1990 TO 1999

The items projected are as defined in the Calculation Method

(a) *New Business Assumptions*
The present value at issue of new business (referred to in the Calculation Method as 'Actual New Business') depends upon the volume and the profitability of new business. Note: business written in 1990 refers to business written in the year to 30 June 1990 etc.

For new business volumes and profitability two different scenarios were considered in 3 below:

(i) In scenario 1 year on year growth of new business volumes reduces from 20% in 1990 to 10% by 1993, remains at that level until 1995 and reduces to 7% by the end of the projections. Profitability of new business expressed as a proportion of premium is assumed to remain at 1989 levels until 1992 and then to fall gradually to 85% of the 1989 level of the remainder of the projections.

This scenario forms the basis of the 'Projected Embedded Value' and the 'Projected New Business' described in the Calculation Method.

(ii) In scenario 2 year on year growth of new business volumes is 25% until 1992 followed by growth of 10% to the end of the projection period. Profitability of new business is assumed to continue at 1989 levels throughout the projection period.

This scenario was forecast by GPG management.

For new business in future years the proportions of the differing policy classes sold have been assumed to be the same as in 1989. For each policy class a typical model point was chosen in terms of age at entry, term of contract, premium size and sum assured to reflect the financial effect of writing that particular class of business.

(b) *Share Capital*

The projected Current Year Values have been adjusted to include the future value of capital injections to be made in connection with this Offer and cash received from the exercise of existing share options.

(c) *Dividends to Shareholders*

It was assumed that during the term of the projection no dividends would be paid to shareholders.

(d) For the purposes of these projections it has been assumed that the free net assets of GPG (which form part of the Embedded Value) will be used to provide a net annual return to shareholders of between 15 and 16%.

(e) (i) For the calculation of Embedded Values as at dates other than 30 June 1989 the assumptions made were as described in 1 and 2(a) to 2(d) above.

(ii) For the calculation of Existing Structure Value as at dates other than 30 June 1989 the formula used is as described in the Calculation Method.

(f) The number of shares and share options in issue, and the number of shares to be issued to the vendors of FPS (Holdings) Limited under the terms of the agreement to acquire that company were supplied by the Management of GPG in a note dated 18 December 1989.

3. RESULTS

	30 June				
	1990	1991	1992	1993	1994
'Actual New Business'	£000	£000	£000	£000	£000
(Present Value of New Business at date of issue) in year ending					
Scenario 1	23,860	27,430	31,550	32,970	34,360
Scenario 2	24,850	31,060	38,830	42,710	46,980
'Embedded Value' at					
Scenario 1	155,490	247,280	354,420	447,630	555,090
Scenario 2	156,560	252,430	368,230	474,140	599,440
'Existing Structure Value' at					
Scenario 1	139,980	160,970	185,130	193,450	201,600
Scenario 2	147,500	189,750	246,790	282,430	322,830
'Current Year Value' at					
Scenario 1	295,470	408,250	539,550	641,080	756,690
Scenario 2	304,060	442,180	615,020	756,570	922,270
'Composite Price' at					
(Value Per Share)	£	£	£	£	£
Scenario 1	3·52	4·39	5·43	6·45	7·61
Scenario 2	3·62	4·77	6·23	7·67	9·35

	1995	1996	1997	1998	1999
'Actual New Business'	£000	£000	£000	£000	£000
(Present Value of New Business at date of issue) in year ending					
Scenario 1	35,690	39,260	42,600	46,010	49,460
Scenario 2	51,680	56,850	62,530	68,790	75,670
'Embedded Value' at					
Scenario 1	681,010	830,720	1,007,760	1,216,520	1,462,100
Scenario 2	749,680	929,320	1,143,590	1,398,620	1,701,550
'Existing Structure Value' at					
Scenario 1	209,440	230,390	249,980	269,990	290,240
Scenario 2	368,830	417,070	469,000	515,900	567,490
'Current Year Value' at					
Scenario 1	890,450	1,061,110	1,257,740	1,486,510	1,752,340
Scenario 2	1,118,510	1,346,390	1,612,590	1,914,520	2,269,040
'Composite Price' at					
(Value Per Share)	£	£	£	£	£
Scenario 1	8·96	10·67	12·65	14·95	17·62
Scenario 2	11·34	13·65	16·34	19·40	23·00

These figures assume that there will be capital injections of £46 million in 1989, £32 million in 1990 and £28 million in 1991 and payments on exercise of existing share options of £1 million in 1991, £2 million in 1992 and £2 million in 1993. Any divergence will result in different figures.

Yours faithfully,

A. E. M. Fine, M.A., F.I.A., A.S.A.

BACON & WOODROW

Consulting Actuaries

A.1.5 THE SCOTTISH LIFE ASSURANCE COMPANY, LIMITED

19 St. Andrew Square,
Edinburgh 2,
5 April 1967

To all Shareholders of the Company

Dear Sir (or Madam),

It was stated in the Directors' Report which accompanied the Annual Accounts that the Directors hoped to make a preliminary announcement to shareholders before the Annual General Meeting on 24 April 1967 about mutulisation of the Company.

My circulars of 23 December 1966 and 16 January 1967 made it clear that mutualisation has been engaging the attention of the Board for some time. I am now able to give you further information about the effect of mutualisation and how it would be accomplished. I am also writing to explain the background to the matter and the reasons which led the Directors to believe that mutualisation would be in the best interests of all concerned.

Method and Effect of Mutualisation

Mutualisation of an assurance company—for which there are precedents—involves the disposal by shareholders of their interests on terms which are in all respects acceptable to them. The effect is that after mutualisation the Company's business is conducted solely for the benefit of policyholders.

Mutualisation of your Company would be effected by a private Act of Parliament under which a new statutory company would be established to take over all the assets and liabilities of the existing company. A Bill is in an advanced state of drafting and the major points of principle have been cleared with the Board of Trade and the Inland Revenue. The Directors are advised that if they present the Bill to Parliament at the earliest opportunity, namely in November 1967, they might reasonably hope to complete mutualisation on 27 September 1968 the date assumed in the draft Bill. Before the Bill can be presented it will have to be approved by the shareholders and an Extraordinary General Meeting will be called for this purpose.

The amount receivable by shareholders would be satisfied by an issue by the new statutory company of reedemable unsecured loan stock in exchange for your Company's shares which would be cancelled. The Directors have been advised that the exchange by shareholders of their shares for the loan stock will not rank as a disposal for Capital Gains Tax purposes.

It is intended that the loan stock should be quoted on The Stock Exchange, London and The Scottish Stock Exchange. The rate of interest payable on the loan stock will be fixed in the light of market conditions prevailing immediately prior to the issue of the notice convening the Extraordinary General Meeting above referred to, and will be stated with that notice.

It is also intended that shareholders should have an opportunity at the time of issue of the loan stock of disposing of their entitlement for cash.

Mutualisation Terms

In January 1967 Mr Geoffrey Heywood, M.B.E., F.F.A., F.I.A., of Messrs. Duncan C. Fraser & Co., Consulting Actuaries, was nominated by the President of the Faculty of Actuaries as an independent actuary to report on the amount which should be offered to shareholders on mutualisation having regard to the respective interests of shareholders and policyholders. The Actuary has now reported that in his opinion the amount receivable by shareholders on mutualisation at 27 September 1968 should be £102 for each share of £5 (£1 10s. 0d. paid).

In arriving at this figure the Actuary has valued the shareholders' interests at 31 December 1966 and has assumed that shareholders would not receive the loan stock until 27 September 1968; he was instructed to assume that shareholders would receive the following dividends in the meantime:

Accounting Year	*Dividend*	*Rate*	*Payable*
1966	Final	14/- per share, less income tax	April 1967 (already paid)
1967	Interim	14/- per share, less income tax	October 1967
1967	Final	14/- per share, less income tax	April 1968
1968	Interim	14/- per share, less income tax	September 1968

The Actuary's valuation takes the following into account:

(a) the market value of the assets;
(b) the present value of estimated future surpluses in the Capital Redemption and Accident Insurance Funds;
(c) the present value of the shareholders' proportion of estimated future surpluses which will emerge in the Life Assurance and Annuity Funds both from existing policies and from estimated new business;
(d) the taxation consequences of mutualisation on the basis of present legislation.

The Actuary has stated that he is of the opinion that the Scheme establishing a Policyholders' Committee on 23 December 1966 does not adversely affect the amount receivable by shareholders on mutualisation.

The Actuary was appointed with a view to establishing a value which would be fair and equitable having regard to the respective interests of shareholders and policyholders. In addition, Messrs Binder, Hamlyn & Co., Chartered Accountants, who have been consulted by the Directors, have stated that in their opinion the method adopted and the assumptions made by the Actuary are fair to shareholders.

Reasons for Considering Mutualisation

Directors of a life assurance company have an important responsibility to policyholders and difficulties experienced by some insurance companies in recent years have shown that the interests of policyholders can be severely prejudiced if control of a company falls into the hands of persons who misuse the assets. Your Company was particularly vulnerable in this respect because the value of its issued share capital is so small in relation to its policyholders' funds. Your Directors therefore considered that steps should be taken to guard against the possibility of acquisition by any persons who might not have sufficient regard for the interests of policyholders. The most effective course would be mutualisation which would give permanent protection. An alternative would be amalgamation with a suitable company but integration of two insurance businesses can raise very complicated problems. It has appeared to the Directors that mutualisation would be likely to benefit shareholders to a greater extent than amalgamation but they have been and are prepared to give full consideration to any proposals for amalgamation.

The Policyholders' Committee

There have been suggestions that the Directors should have referred to the shareholders before adopting the Scheme establishing the Policyholders' Committee on 23 December 1966 since this action might have affected the interests of shareholders.

Your Directors were concerned to ensure that protection for policyholders should not be delayed until mutualisation or amalgamation could be completed and they came to the conclusion that the only solution to the problem would be the introduction of a Scheme on the lines of that adopted. Preparations were made accordingly during 1966. Towards the end of the year the Directors had grounds for thinking that a bid might be received from a source which they were unable to identify and protection of policyholders became a matter of urgency. The Directors therefore considered it essential to introduce the Scheme without delay and for this reason, after much consideration, and after consulting their legal advisers, the Directors decided to adopt the Scheme without prior reference to shareholders.

At that time the market price of the Company's shares was between £50 and £60 per share and the Directors believed that if technical difficulties could be overcome, mutualisation would be practicable and the amount receivable by shareholders would be substantially higher. The Directors consider that if they had called a meeting of shareholders this could have precipitated a bid when the Directors were not in a position to get the best terms for their shareholders who might have accepted any offer in excess of the market price.

The Directors are satisfied that the adoption of the Scheme without reference to shareholders has been in the interests of both shareholders and policyholders. So far as mutualisation is concerned the Actuary, as already mentioned, has confirmed that the amount receivable by shareholders has not been adversely affected by the Scheme.

I hope that the explanations given in this letter will be helpful to all shareholders in explaining recent developments. Shareholders will be given detailed proposals for mutualisation in ample time for consideration before the holding of an Extraordinary General Meeting to approve the terms of the Bill. It may be possible to hold such a meeting in June 1967.

Yours faithfully,
CHARLES R. MUNRO
Chairman

A1.6 APPRAISAL OF VALUE OF TSB LIFE AND TSB PENSIONS

The following is a copy of the report by Tillinghast, Nelson & Warren Ltd., Consulting Actuaries:

The Directors,
TSB Group plc

Chesterfield House,
15–19 Bloomsbury Way,
London WC1A 2TP

12 September 1986

Dear Sirs,

As instructed, we have appraised the values, on a going concern basis, of TSB Life Limited ('TSB Life') and of TSB Pensions Limited ('TSB Pensions').

In our appraisal we proceeded by considering the following elements of value:

(i) existing business, being business already on the books of each company;
(ii) shareholders' assets and other related inner reserves not reflected in the published balance sheets prepared under the provisions of the Companies Act 1985 relating to insurance companies; and
(iii) goodwill or 'existing structure value', being each company's proven ability to make profitable use of its assets as evidenced by continuing new business sold on profitable terms.

In each case the values attributed are net of all taxes to be borne within each company.

As indicated in Note 19 to the Accountants' Report in Part IX of the listing particulars dated 12 September 1986, the life insurance fund of TSB Life ceased paying introduction commissions to the TSB banks from 1 October 1983. In order appropriately to recognise the economic value to the TSB Group of TSB Life, our appraised value assumes that commissions to the TSB banks continued on the same basis as those paid in respect of periods up to 30 September 1983. These commissions, which are slightly below the normal level for introducers of business, are an economic reflection of the service performed.

The values have been calculated on the basis of a continuing relationship between the TSB banks and TSB Life and TSB Pensions respectively.

No part of the value of TSB Unit Trusts Limited arising from current holdings and future purchases by TSB Life or TSB Pensions of units in unit trusts managed by that company has been included in our appraised values.

The values appraised as at 31 March 1986 are £181 million in respect of TSB Life and £14 million in respect of TSB Pensions, a total of £195 million. Corresponding total values at 30 September 1984 and 30 September 1985 were £123 million and £165 million respectively. In arriving at our value of TSB Life we have deducted half of the forecast dividend, payable to TSB Trust Company Limited, for the year to 30 September 1986.

These values have been computed on the same basis as that used by us in our annual report to the directors of TSB Trust Company Limited. The basis, which is consistent from year to year, is intended to be conservative.

In our work we have relied on audited and unaudited information supplied to us by each company as at 30 September 1985 supplemented by unaudited information supplied covering the period to 31 March 1986. We have not carried out independent checks of the data and other information supplied to us by each company.

Yours faithfully,

I. C. Smart, F.I.A.

TILLINGHAST, NELSON & WARREN LTD.

Consultants and Actuaries

APPENDIX 2

EXTRACTS FROM PEARL DEFENCE DOCUMENT

A2.1 PEARL GROUP

252 HIGH HOLBORN LONDON WC1V 7EB

Directors:

R. E. Holland (*Chairman*)	Sir Charles Tidbury*
R. Fearn* (*Deputy Chairman*)	C. W. Flack*
S. A. Maitland	D. M. Gordon
N. N. Proddow	E. H. Bond*
A. F. Lankshear*	D. W. Davies
Sir Austin Pearce*	C. A. K. Fenn-Smith*

**non-executive*

To the Shareholders 14 November 1989

Dear Shareholder,

I am writing to give you details of the Combined Valuation of Pearl, which includes the independent Appraisal Value now received from Tillinghast, our consulting actuaries.

In addition, this document contains a forecast of Aggregate Profit after tax for 1989, which incorporates the Adjusted Embedded Value Profit for the life business calculated on an actuarial basis. This gives a better indication of the underlying profitability of your company than traditional accounting methods.

I would also like to explain Pearl's dividend policy and provide a forecast of a substantially increased final dividend for 1989.

The Combined Valuation

The Combined Valuation is the sum of Shareholders' Funds and Tillinghast's independently calculated Appraisal Value of the life business of your company:

—the Combined Valuation as at 30 September 1989 amounts to £1,378 million, equivalent to 765p per share.

—the Combined Valuation does not contain any premium for control.

Profits

The traditional method of accounting adopted by life assurance companies in the U.K. is recognised to provide an incomplete measure of annual profits. A more complete measure is known as embedded value profit, details of which will, in future, be published annually by Pearl.

Your Board has calculated a forecast Adjusted Embedded Value Profit after tax for the life business for the year ending 31 December 1989. When this is added to the forecast after-tax profit for the non-life business:

—the Aggregate Profit after tax is forecast to be not less than £130 million for 1989.
—this is 31% above the estimated comparable figure for 1988.

Dividend policy and forecast

The quality of Pearl's earnings is very high because of the substantial amounts of life business already written. Taking this into account:

—your Directors decided at the time of the interim dividend earlier this year to accelerate the release of life profits paid as dividends to shareholders. We intend to extend this policy and expect that, in this and future years, all of the normal life profit attributable to shareholders, together with an appropriate proportion of the Non-Life Profit, will be paid by way of dividend.
—your Directors intend, in the absence of unforeseen circumstances, to recommend a final dividend in respect of 1989 of 17·5p net per share, giving a total of 25p net per share for 1989. **This total will represent an increase of nearly 67% over 1988.**

AMP's offer seriously undervalues your interest in Pearl. It fails to recognise Pearl's financial strength, good prospects for growth and strong management team.

Your Board, which has been so advised by Kleinwort Benson, unanimously advises you to reject any offer which fails to reflect the Combined Valuation, equivalent to 765p per share.

Yours sincerely,
R. EINION HOLLAND
Chairman

A2.2 VALUATIONS

In order to arrive at an appropriate valuation for a group such as Pearl, it is necessary to appraise the value of the life business and to add to this shareholders' funds:

The Life Business

The value of the shareholders' interest in the life business is appraised, commonly by independent consulting actuaries, on a going concern basis, by valuing:

—'in-force value', being the value to shareholders of future profits expected from

business already written, together with the shareholders' interest in the investment reserve; and
—'existing structure value', being the value to shareholders of a company's ability to make profitable use of its assets, as evidenced by past performance, by continuing to write business on profitable terms.

While the existing structure value relies to a greater degree than the in-force value upon professional judgement since it represents an assessment of the ability of the company to continue to write profitable business, it is determined by an independent actuary on the basis of his experience of the industry and knowledge of the company.

Shareholders' Funds

Shareholders' funds broadly comprise investments relating to the non-life business, less provisions for non-life insurance liabilities. The investments are revalued by reference to market values as at the date of valuation.

The importance of appraisal values

Appraisal values are recognised to be a key measure for shareholders to consider when assessing any offer for a company with a life business:

—appraisals are a standard actuarial method of assessing the value of a life business and are commonly used in public and private transactions as a basis for determining the value of a life company.
—the methodology used to calculate the appraisal value of a life company is one which is widely accepted by actuaries and other industry experts.

THE COMBINED VALUATION OF PEARL

The Combined Valuation of Pearl as at 30 September 1989 amounts to £1,378 million. It comprises the Appraisal Value of the life business independently determined by Tillinghast, amounting to £1,190 million, and the Directors' estimate of Shareholders' Funds amounting to £188 million, after deducting an amount of £30 million in respect of deferred taxation.

Copies of letters from Tillinghast, containing the Appraisal Value (which sets out separately the in-force value and the existing structure value), and from Clark Whitehill, Pearl's auditors, reporting on the estimate of Shareholders' Funds, are set out in Annex A.

The Combined Valuation of £1,378 million:

—is equivalent to 765p per share.
—is substantially above the AMP offer.
—does not include any premium for control of Pearl.

AMP's offer is unrealistically low and does not take account of the scarcity value of Pearl, with its household name, large sales force, substantial customer base and wide product range.

Your should reject any offer which fails to reflect the Combined Valuation, equivalent to 765p per share.

The Combined Valuation clearly points to the inadequacy of AMP's offer.

TRADITIONAL ACCOUNTING FOR PROFITS

In common with other life companies, Pearl reports its life profits by the traditional method of historical cost accounting in accordance with Companies Act legislation and generally accepted U.K. accounting principles and practices. It is widely recognised both by the insurance industry and outside commentators that this traditional method of accounting does not give shareholders an adequate measure of the value of their investment or of the performance of a life business.

In particular, the traditional life profits of Pearl primarily reflect a percentage of the cost of bonuses paid to policyholders rather than the underlying business progress made during the year.

EMBEDDED VALUE PROFIT

In view of the shortcomings of historical cost accounting in measuring life profits, embedded value profit accounting, based on actuarial principles, has been developed in recent years as an alternative.

Embedded value profit, although not a measure of distributable profit, is a better guide to the underlying progress made by a life business during the year because:

—it includes a measure of the shareholders' proportion of the value of new business written during the year; and
—it reduces the distorting impression of a year's progress created by historical cost accounting.

Embedded value profit accounting is increasingly accepted in the U.K. and has been adopted in the accounts of several major groups to report the contribution from their life businesses, including:

—Barclays, which owns Barclays Life.
—Lloyds Bank, which owns 57% of Lloyds Abbey Life.
—TSB, which owns Target Group and Hill Samuel.

PEARL'S PROFITS AND DIVIDENDS

Aggregate Profit

Your Directors forecast that, in the absence of unforeseen circumstances and on the bases and assumptions referred to in Annex B and as described below, the Aggregate Profit after tax for Pearl for the year ending 31 December 1989 will be not less than £130 million. This:

—is equivalent to 72·2p per share.
—is 31% above the Directors' estimate of Aggregate Profit after tax (prepared on the same basis) for the year ended 31 December 1988.

Included in the Aggregate Profit is the Directors' forecast of Adjusted Embedded Value Profit for 1989 of £120 million, which reflects the strong personal pensions sales performance during 1989. Embedded value profit is calculated by aggregating the net transfer out of the life funds made during the year and the difference between the in-force value of the life business at the beginning and end of the year. The closing in-force value reflects, *inter alia*, actual investment performance during the year which can vary materially from the underlying investment return assumption used to calculate the Appraisal Value.

In respect of the Adjusted Embedded Value Profit for 1989, the closing in-force value reflects actual investment performance up to 8 November 1989 and a continuation of the investment return assumption thereafter. An adjustment, amounting to £35 million, has been made to eliminate the favourable variance from the investment return assumption to arrive at the Adjusted Embedded Value Profit for Pearl for 1989.

On this basis, the Directors forecast the Adjusted Embedded Value Profit for 1989 to be £120 million. On a comparable basis for 1988, the deduction for the favourable variance was £17 million and the Adjusted Embedded Value Profit was £89 million.

Dividends

Your Directors decided at the time of the interim dividend earlier this year to accelerate the release of life profits paid as dividends to shareholders. They intend to extend this policy and expect that, in this and future years, all of the normal life profit attributable to shareholders, together with an appropriate proportion of the Non-Life Profit, will be paid by way of dividend.

Your Directors intend, in the absence of unforeseen circumstances, to recommend a final dividend of 17·5p net per share, giving a total of 25p net per share for 1989. **This total will represent an increase of nearly 67% over 1988.**

These profit and dividend forecasts clearly point to the inadequacy of AMP's offer.

SUCCESS IN A TIME OF CHANGE

Pearl's objective is to continue to increase value for shareholders.

Pearl's commitment to this objective is demonstrated by the considerable progress made over the last few years:

—management has been strengthened to identify and exploit new opportunities in the financial services market.
—the direct sales force has undergone restructuring to improve productivity.
—the head office is being relocated to Peterborough to reduce costs and improve efficiency.
—the wide product range has been expanded to meet the challenges of the market.

The results demonstrate Pearl's success in meeting its objective:

—the quality of business has improved substantially. In the first half of 1989, 81% of new notional annual premiums derived from ordinary branch business.
—Pearl is gaining an increasing volume of business with a higher average premium.
—reported earnings per share grew in the years 1984 to 1988 **at an annual compound rate of 35·5%.**
—dividends per share grew in the years 1984 to 1988 at an annual compound rate of 18·5%. **The annual compound growth rate over the period 1985 to 1989, including the forecast 1989 dividend, is 29·8%.**

Pearl has demonstrated its ability to succeed in a time of change—Pearl is well placed to continue building on the momentum of its success in the years to come.

STAY WITH PEARL

—Pearl's Combined Valuation is equivalent to 765p per share.
—Pearl's total dividend for 1989 is forecast to be 25p per share, an increase of nearly 67% over 1988.
—Pearl's objective is to continue to increase value for shareholders.

CONTINUE TO REJECT AMP'S OFFER

ANNEX A

Combined Valuation

1. COMBINED VALUATION

The Combined Valuation of Pearl as at 30 September 1989 comprises the aggregate of (i) Tillinghast's Appraisal Value and (ii) an estimate by the Directors of Shareholders' Funds as at 30 September 1989.

Tillinghast have determined the Appraisal Value to be £1,190 million.

The Directors estimate that the Shareholders' Funds amount to £188 million, after making a deduction of an amount of £30 million in respect of deferred taxation on unrealised appreciation of investments as at 30 September 1989. The deferred taxation deduction has been calculated on a basis consistent with the Appraisal Value.

The Combined Valuation is £1,378 million, equivalent to 765p per share on the basis of the 180,174,238 shares in issue on 14 November 1989.

2. LETTERS

(a) *Tillinghast*

The Directors,
Pearl Group PLC,
252 High Holborn,
London WC1V 7EB

Tillinghast
Castlewood House,
77–91 New Oxford Street,
London WC1A 1PX

The Directors,
Kleinwort Benson Limited,
20 Fenchurch Street,
London EC3P 3DB

14 November 1989

Gentlemen,

Appraisal Value of the Life Business

We have appraised, on a going concern basis, the value of the shareholders' interest in the life business of the subsidiaries of Pearl if operated under its current management and in a manner consistent with Pearl's management record.

In our appraisal, we considered the following elements of value:

(i) the in-force value, being the value to shareholders of future profits expected from business already written, together with the shareholders' interest in the investment reserve; and
(ii) the existing structure value, being the value to shareholders of Pearl's current ability to make profitable use of its assets, as evidenced by past performance, by continuing to write business on profitable terms.

In each case, the values are net of all taxes to be borne within each relevant company.

The value of the shareholders' interest in the life business appraised as at 30 September 1989 is:

In-force value	£630 million
Existing structure value	£560 million
Appraisal Value	£1,190 million

This value is stated without any allowance for a control premium.

In our work, we have relied on audited and unaudited information supplied to us by Pearl for periods up to 31 December 1988 supplemented by unaudited information supplied by Pearl for the period to 30 September 1989. We have reviewed this information for reasonableness and consistency with our knowledge of the industry, but we have not carried out independent checks of the data and other information supplied to us.

In our appraisal, we have used assumptions which we consider to be reasonable. These are based on Pearl's own experience and our knowledge of the industry. The principal bases and assumptions used in the calculations of the in-force value and the value to shareholders of business written during the year ended 30 September 1989 (the 'written business value') as appropriate are set out below:

(i) future profits after taxation have been discounted at a rate of 12% p.a.;
(ii) gross investment returns have been assumed at rates varying between 10% p.a. and 12·6% p.a. depending on the type of asset;
(iii) tax has been provided in full at the rates applicable to investment income, capital gains and pension and annuity business profits: due allowance has been made for the changes made to the taxation of life assurance companies incorporated in the Finance Act 1989;
(iv) future mortality rates, lapse rates and expense levels have been derived from an analysis of Pearl's recent operating experience: AIDS, while it is not expected materially to affect the appraisal value of Pearl, has been allowed for;
(v) the level of inflation for maintenance expenses has been taken to be consistent with the investment return assumptions;
(vi) the current actuarial reserving methods and bases, as detailed in the annual returns to the Department of Trade and Industry for 1988, will continue to be used;
(vii) there will be no change to the methods and bases used to calculate the levels of surrender values;
(viii) assets have been taken at market value;
(ix) reversionary bonuses at current scales and the current philosophy of determining terminal bonuses will be maintained; and
(x) there is an excess of life business assets over those needed to support the above bonus strategy on in-force business. Only a proportion of this excess will be available to shareholders and we have valued this in a manner consistent with the above bonus strategy and our assessment of the existing structure value.

The existing structure value has been derived by first calculating the written business value; this amounts to £74 million. In accordance with our normal practice, our assessment then takes into account a number of factors including, *inter alia*, knowledge of recent insurance company acquisitions. Pearl's current ability to make profitable use of its assets as evidenced by past performance (after making a reduction for certain exceptional levels of sales during the year ended 30 September 1989, which contributed £27 million to the written business value) and the future prospects for a business of such size and with such distribution systems.

Words and expressions used in this letter bear the same meanings, unless the context otherwise requires, as those set out in Annex C of the circular to shareholders of Pearl dated 14 November 1989.

Yours faithfully,

I. C. Smart, F.I.A.

TILLINGHAST

Consultants and Actuaries

(b) *Clark Whitehill*

Clark Whitehill
Chartered Accountants,
25 New Street Square,
London EC4A 3LN

14 November 1989

The Directors,
Pearl Group plc
252 High Holborn,
London WC1V 7EB

The Directors,
Kleinwort Benson Limited,
20 Fenchurch Street,
London EC3P 3DB

Gentleman,

Appraisal Value and Shareholders' Funds

In accordance with your instructions, we have reviewed the accounting policies and calculations for the estimate of Shareholders' Funds of Pearl as at 30 September 1989. The estimate is based on Pearl's unaudited management accounts, includes quoted investments at market value and excludes transfers from the life funds since 31 December 1988. The Directors of Pearl are solely responsible for the estimate, which is set out in Annex A to the circular to shareholders of Pearl dated 14 November 1989 (the 'Circular').

In our opinion, the estimate of Shareholders' Funds, so far as the accounting policies and calculations are concerned, has been properly compiled, and is presented on a basis consistent with the accounting policies normally adopted by Pearl subject to:

(i) the adoption of Statement of Standard Accounting Practice No. 24 'Accounting for pensions costs', which will apply to Pearl for the first time this year; and
(ii) the deduction by the Directors of an amount of £30 million in respect of deferred taxation on unrealised appreciation of investments as at 30 September 1989.

The aggregate of the estimate of Shareholders' Funds of £188 million, and of the Tillinghast Appraisal Value of £1,190 million, is £1,378 million, equivalent to 765p per share on the basis of the 180,174,238 shares in issue on 14 November 1989.

Words and expressions used in this letter bear the same meanings, unless the context otherwise requires, as those set out in Annex C of the Circular.

Yours faithfully,

CLARK WHITEHILL

ANNEX B

Aggregate Profit After Tax

1. AGGREGATE PROFIT AFTER TAX

The Aggregate Profit after tax comprises (i) Pearl's after-tax profit relating to the non-life business (the 'Non-Life Profit'), and (ii) the after-tax profit of the life business of the subsidiaries of Pearl on an embedded value basis adjusted as described below ('Adjusted Embedded Value Profit').

Embedded value profit is calculated by aggregating (i) the net transfer out of the life funds and (ii) the difference between the in-force value of the life business at the beginning and end of the year. The closing in-force value reflects, *inter alia*, actual investment performance during the year and assumes a continuation of the underlying investment return assumption used to calculate the Appraisal Value thereafter. Actual investment performance may vary materially from the investment assumption and accordingly an adjustment has been made to eliminate this variance to arrive at the Adjusted Embedded Value Profit.

1988 Non-Life Profit

Pearl's audited Non-Life Profit in respect of the year ended 31 December 1988 amounted to £9·90 million as restated to reflect the application of SSAP 24.

1989 Non-Life Profit

The Directors forecast that, in the absence of unforeseen circumstances, the Non-Life Profit for the year ending 31 December 1989 will be not less than £10 million.

1988 Adjusted Embedded Value Profit

The Directors estimate that the Adjusted Embedded Value Profit for the year ended 31 December 1988 was £89 million.

1989 Adjusted Embedded Value Profit

The Directors forecast that, in the absence of unforeseen circumstances, the

Adjusted Embedded Value Profit for the year ending 31 December 1989 will not be less than £120 million.

Investment Variances

In the year ended 31 December 1988, actual investment performance significantly exceeded the investment return assumption made by Tillinghast in relation to their Appraisal Value and used by the Directors in their estimate and forecast of Adjusted Embedded Value Profit. The favourable variance in 1988, which has been eliminated from the Adjusted Embedded Value Profit, amounted to £17 million.

In the year ending 31 December 1989, the closing in-force value reflects, *inter alia*, actual investment performance during the period to 8 November 1989, being the latest practicable date prior to the printing of this document, and the application of Tillinghast's investment return assumption thereafter. The estimated favourable variance for 1989, which has been similarly eliminated, has been calculated to be £35 million. The actual variance as at 31 December 1989 will depend on market conditions then prevailing.

1988 Aggregate Profit

The Directors estimate that the Aggregate Profit, including the Adjusted Embedded Value Profit, for the year ended 31 December 1988 amounted to £98·9 million. Based on the number of shares then in issue, this is equivalent to an Aggregate Profit per share of approximately 54·9p.

1989 Aggregate Profit

The Directors forecast that, in the absence of unforeseen circumstances, the Aggregate Profit, including the Adjusted Embedded Value Profit, for the year ending 31 December 1989 will be not less than £130 million. Based on the number of shares in issue as at 14 November 1989, this is equivalent to an Aggregate Profit per share for the year ending 31 December 1989 of 72·2p.

Bases and assumptions

The respective estimates and forecasts above are made on the bases and assumptions contained in the letter from Tillinghast set out in Annex A and the following, as appropriate:

(i) projections of sales have been made for the three months ending 31 December 1989;

(ii) in the case of Aggregate Profit and Adjusted Embedded Value Profit, actual investment performance has been replaced by the investment return assumption contained in Tillinghast's letter set out in Annex A;

(iii) unaudited management accounts have been included for the nine months ended 30 September 1989 and a management forecast of revenue and expenses has been taken for the three months ending 31 December 1989;

(iv) no account has been taken of the costs relating to the offer;

(v) full account has been taken of the estimated relocation costs to Peterborough to be incurred in 1989;

(vi) the present management of Pearl will not be changed;

(vii) Pearl will not be materially affected by industrial disputes or other disruptions;

(viii) there will be no significant changes in governmental or other regulations, including taxation, affecting Pearl;

(ix) investment conditions, foreign exchange rates and interest rates currently prevailing will not change significantly;

(x) there will be no unexpectedly large or numerous insurance claims or major revisions to existing claims estimates affecting the 1989 results arising after the date of this Circular; and

(xi) business currently being run-off will not be adversely affected by liabilities arising from current claims of a contentious nature against insurers reinsured by Pearl Assurance.

2. LETTERS

(a) *Tillinghast*

Tillinghast
Castlewood House,
77–91 New Oxford Street,
London WC1A 1PX

14 November 1989

The Directors,
Pearl Group plc,
252 High Holborn,
London WC1V 7EB

The Directors,
Kleinwort Benson Limited,
20 Fenchurch Street,
London EC3P 3DB

Gentlemen,

Adjusted Embedded Value Profit of the Life Business

We have reviewed the estimate and forecast of the Adjusted Embedded Value Profit of the life business of the subsidiaries of Pearl for the years ended 31 December 1988 and ending 31 December 1989 respectively. We have also reviewed the estimates of investment variances set out in Annex B of the circular to shareholders of Pearl dated 14 November 1989 (the 'Circular') for 1988 and 1989. We are of the opinion that the estimates and forecast, for which the Directors of Pearl are solely responsible, have been properly compiled upon the bases and assumptions used by the Directors of Pearl as referred to in Annex B of the Circular.

We are also of the opinion that the bases and assumptions are reasonable and consistent with those set out in our letter of today's date set out in Annex A of the Circular.

Words and expressions used in this letter bear the same meanings, unless the context otherwise requires, as those set out in Annex C of the Circular.

Yours faithfully,

I. C. Smart, F.I.A.,

TILLINGHAST

Consultants and Actuaries

(b) *Clark Whitehill*

Clark Whitehill
Chartered Accountants,
25 New Street Square,
London EC4A 3LN

14 November 1989

The Directors,
Pearl Group plc,
252 High Holborn,
London WC1V 7EB

The Directors,
Kleinwort Benson Limited,
20 Fenchurch Street,
London EC3P 3DB

Gentlemen,

Aggregate Profit Forecast and Estimate

In accordance with your instructions, we have reviewed certain financial information to be included in the circular to shareholders of Pearl dated 14 November 1989 (the 'Circular').

(a) Aggregate Profit Forecast

The Aggregate Profit Forecast for the year ending 31 December 1989, for which the Directors of Pearl are solely responsible, combines:

(i) Pearl's forecast of the Non-Life Profit (the 'Non-Life Profit Forecast'), prepared on a historical cost basis; with

(ii) Pearl's forecast of the Adjusted Embedded Value Profit (the 'Adjusted Embedded Value Profit Forecast').

We have reviewed the accounting policies and calculations for the Non-Life Profit Forecast. The Non-Life Profit Forecast is based upon unaudited management accounts for the nine months ended 30 September 1989 and upon a management forecast for the three months ending 31 December 1989.

In our opinion, the Non-Life Profit Forecast, so far as the accounting policies and calculations are concerned, has been properly compiled on the bases and assumptions made by the Directors referred to in Annex B of the Circular and on a basis consistent with the accounting policies normally adopted by the Group, subject to the adoption of Statement of Standard Accounting Practice No. 24 'Accounting for pension costs' ('SSAP 24'), which will apply to Pearl for the first time this year.

We have not reviewed the Adjusted Embedded Value Profit Forecast, which is the subject of a separate letter from Tillinghast, a copy of which is set out in Annex B of the Circular. We have reviewed the accounting policies and the accounting data supplied for the calculations of the Adjusted Embedded Value Profit Forecast, but not the actuarial bases, assumptions and calculations.

In our opinion, the accounting policies referred to above are consistent with those normally adopted by Pearl, subject to the application of SSAP 24.

We confirm that the Non-Life Profit Forecast and the Adjusted Embedded Value Profit Forecast have been properly combined to produce the Aggregate Profit Forecast after tax for the year ending 31 December 1989.

(b) Aggregate Profit Estimate

The Aggregate Profit Estimate for the year ended 31 December 1988, for which the Directors of Pearl are solely responsible, combines:

(i) the audited Non-Life Profit, with
(ii) Pearl's estimate of the Adjusted Embedded Value Profit (the 'Adjusted Embedded Value Profit Estimate').

In our opinion, the audited Non-Life Profit is correctly extracted from the audited consolidated accounts of Pearl for the year ended 31 December 1988, as restated in order to reflect the adoption of SSAP 24.

We have not reviewed the Adjusted Embedded Value Profit Estimate, which is the subject of a separate letter from Tillinghast, a copy of which is set out in Annex B of the Circular. We have reviewed the accounting policies and the accounting data supplied for the calculations of the Adjusted Embedded Value Profit Estimate, but not the actuarial bases, assumptions and calculations.

In our opinion, the accounting policies referred to above are consistent with those normally adopted by Pearl, subject to the application of SSAP 24.

We confirm that the audited Non-Life Profit (as restated) and the Adjusted Embedded Value Profit Estimate have been properly combined to produce the Aggregate Profit Estimate for the year ended 31 December 1988.

Words and expressions used in this letter bear the same meanings, unless the context otherwise requires, as those set out in Annex C of the Circular.

Yours faithfully,

CLARK WHITEHILL

(c) *Kleinwort Benson Limited*

The Directors,
Pearl Group plc,
252 High Holborn,
London WC1V 7EB

Kleinwort Benson Limited
A member of TSA and of the AIBD,
20 Fenchurch Street,
London EC3P 3BD

14 November 1989

Gentlemen,

Forecast Non-Life Profit

We have discussed with you, and with Clark Whitehill, Pearl's forecast of Non-Life Profit for the year ending 31 December 1989 (the 'Non-Life Profit Forecast'), which is set out in Annex B of the circular to shareholders of Pearl dated 14 November 1989 (the 'Circular').

Having discussed the preparation of the Non-Life Profit Forecast with Clark Whitehill, we consider that the Non-Life Profit Forecast, for which the Directors of Pearl are solely responsible, has been prepared after due and careful consideration.

We have not reviewed the estimate and forecast of the Adjusted Embedded Value Profit for the year ended 31 December 1988 and the year ending 31 December 1989 respectively, as set out in Annex B of the Circular, which are the subject of a separate letter from Tillinghast, a copy of which is set out in that Annex.

Words and expressions used in this letter bear the same meanings, unless the context otherwise requires, as those set out in Annex C of the Circular.

Yours faithfully,

For KLEINWORT BENSON LIMITED

Christopher Eugster

Director

ANNEX C

INTRODUCTION

This Circular should be read in conjunction with the documents sent to Pearl shareholders from the Chairman of Pearl dated 19th and 31st October 1989, copies of which are available from Kleinwort Benson Limited, 20 Fenchurch Street, London EC3P 3DB.

RESPONSIBILITY STATEMENT

The issue of this Circular has been approved by a duly authorised committee of the Board of Pearl. The Directors are the persons responsible for the information contained in this circular. To the best of their knowledge and belief (having taken all reasonable care to ensure that such is the case), the information contained in this circular is in accordance with the facts and does not omit anything likely to affect the import of such information. All the Directors accept responsibility accordingly.

OTHER INFORMATION

(a) Save as disclosed herein, the Directors are not aware of any material change in the information set out in the documents to shareholders dated 19 and 31 October 1989.
(b) Pearl, whose registered office is at 252 High Holborn, London WC1V 7EB, is registered in England under number 1974498.
(c) Kleinwort Benson, Tillinghast and Clark Whitehill have given and not withdrawn their respective written consents to the issue of this Circular with the inclusion of their letters and references to their respective names in the forms and contexts in which they respectively appear.
(d) The maximum liability to taxation on the unrealised appreciation of investments which would have arisen if the investments included in shareholders' funds as at 30 September 1989 had been realised at the values giving rise to such appreciation is estimated by the Directors to be £52 million.

DEFINITIONS

The following definitions apply throughout this document, unless the context otherwise requires:

'Pearl'	Pearl Group plc and/or its subsidiaries and/or any or all of them
'Pearl Assurance'	Pearl Assurance plc
'shares'	fully paid ordinary shares of 5p each in Pearl
'shareholders'	holders of shares
'Directors'	the Directors of Pearl
'AMP'	Australian Mutual Provident Society or Australian Mutual Provident Society and its subsidiaries or, where the context requires, AMP (U.K.) plc
'offer'	the offer on behalf of AMP (U.K.) plc contained in the offer document dated 6 October 1989 to acquire the shares not already owned by AMP
'Circular'	this circular to shareholders dated 14 November 1989

'Kleinwort Benson'	Kleinwort Benson Limited
'Tillinghast'	the insurance consulting division of Towers, Perrin, Forster & Crosby Inc., actuaries and management consultants
'Shareholders' Funds'	the Directors' estimate of funds attributable to shareholders as at 30 September 1989 excluding transfers from the life funds since 31 December 1988, and prepared on a historical cost basis as modified by the revaluation of investments, and after deducting an amount of £30 million for deferred taxation.
'Adjusted Embedded Value Profit'	the after-tax profit from the life business of the subsidiaries of Pearl on an embedded value basis, which comprises the aggregate of: (a) the net transfer out of the life funds; and (b) the change in the in-force value between balance sheet dates adjusted to eliminate investment variance as detailed in Annex B
'Aggregate Profit'	the aggregate of the Non-Life Profit and the Adjusted Embedded Value Profit
'Appraisal Value'	the appraisal value of the shareholders' interest in the life business of the subsidiaries of Pearl as at 30 September 1989 contained in Tillinghast's letter set out in Annex A
'Combined Valuation'	the aggregate of the Appraisal Value and Shareholders' Funds
'cost of bonus'	the amount required at the date of valuation to provide for bonuses declared
'existing structure value'	the value to shareholders of a company's ability to make profitable use of its assets, as evidenced by past performance, by continuing to write business on profitable terms
'in-force value'	the value to shareholders of future profits expected from business already written, together with the shareholders' interest in the investment reserve
'life business'	long-term business as defined by the Insurance Companies Act 1982
'life funds'	the life funds of the subsidiaries of Pearl
'life profits'	the aggregate of: (a) approximately $\frac{1}{9}$ of the cost of bonuses declared on all in-force with-profit life policies; and

	(b) the entire distributable surpluses arising from actuarial valuations of the life funds of each unit-linked subsidiary of Pearl
'new notional annual premiums'	new annual premiums plus 10% of new single premiums
'non-life business'	business which is not life business, including all general insurance business, shareholders' investment income and unit trust management services
'normal life profit'	life profits excluding those relating to any special bonuses declared
'Non-Life Profit'	Pearl's after-tax profit relating to the non-life business, prepared on a historical cost basis

SOURCES

Save where described to the contrary, figures relating to Pearl have been derived from published audited accounts, unaudited interim reports or internal statistics and sources.

DOCUMENTS AVAILABLE FOR INSPECTION

Copies of the documents referred to in paragraph 9 of the Appendix to the document to shareholders dated 19 October 1989 and in paragraph 5 of the Appendix to the document to shareholders dated 31 October 1989, together with a copy of each of the letters contained in Annex A and Annex B and a copy of each of the letters of consent referred to in paragraph 3 above, can be inspected at the offices of Linklaters & Paines, Barrington House, 59–67 Gresham Street, London EC2V 7JA during normal working hours on any weekday (Saturdays and public holidays excepted) while the offer remains open for acceptance.

APPENDIX 3

AMP LETTER TO PEARL SHAREHOLDERS, 21 NOVEMBER 1989

From Ian Salmon, 21 November 1989
Chief General Manager,
International

Dear Shareholder,

INCREASED AND FINAL* OFFER FOR YOUR ORDINARY SHARES

On 16th November 1989, we announced that we had increased our offer to 690p in cash or loan notes for each of your Pearl ordinary shares.

The Increased Offer values the whole of Pearl at approximately £1·24 billion. The formal offer is contained in the letter from Morgan Grenfell on pages 11 to 18 of this document.

Since the Increased Offer was announced, we have acquired, or have contracted to acquire, 36 million ordinary shares, taking our holding to over 38% of Pearl.

This letter sets out the reasons why you should accept our Increased Offer without delay.

ACCEPTANCES MUST BE RECEIVED BY 1.00 P.M. ON 5 DECEMBER 1989.

**AMP U.K. reserves the right to increase and/or extend its Offers in the unlikely event that a competitive situation arises.*

KEY POINTS

The following are the key points which you should consider:

—Our Increased Offer is most generous.
—Pearl's defence has relied on a theoretical valuation which gives no indication as to the realisable value of your shares.
—Pearl has not published a forecast of profit for 1989 on a basis consistent with previous years. This is an extraordinary omission.
—Pearl's changed dividend policy raises serious questions about the erosion of Pearl's financial strength in the medium term.
—Pearl's response to the serious problems it faces has been complacent and ineffectual. Nowhere in its defence has Pearl provided any credible evidence that it is equipped to reverse its long term decline.

The only realisable value for your shares is the price that you can obtain for them.

PEARL's COMBINED VALUATION—
THEORETICAL AND IRRELEVANT

Pearl's 'Combined Valuation' comprises three distinct elements, each of which is of radically different quality and certainty.

	Amount per Pearl share (p)
Shareholders' funds	104
Value of in-force business	350
Non-goodwill element	454
Goodwill	311

As I pointed out in my letter of 10 November 1989, actuarial appraisals are highly conjectural and can be misleading.

—The 'goodwill' element is particularly doubtful. It represents an attempt to attribute a value to business yet to be written. This element represents over 40% of the 'Combined Valuation'.
—Some of the key bases and assumptions used in Pearl's actuarial appraisal are distinctly optimistic. Less optimistic assumptions would result in a much lower actuarial appraisal figure.
—The Increased Offer represents a premium of more than 50% over 454p per share, the non-goodwill element of Pearl's 'Combined Valuation'. This is an extremely generous premium bearing in mind that Pearl has:
  —grown its new business at only half the industry average over the last 10 years; and
  —seen its market position fall from 3rd place in 1978 to 17th place in 1988.

The Increased Offer gives you an extremely generous premium for control.

PEARL'S PROFIT PROJECTION—
CONFUSING AND CONTROVERSIAL

Pearl has chosen for the first time to use 'embedded value profit accounting' to forecast the 1989 results from its life business, which represent well over 90% of its 1989 'Aggregate Profit' forecast. Pearl is therefore asking you to accept that the vast bulk of its profits should now be measured in a completely different way.

It is essential that the profit arrived at as a result of this process is not confused with conventional earnings.

—Pearl's 'Adjusted Embedded Value Profit' forecast takes credit today for tomorrow's uncertain profits.
—Embedded value profits are not the same as distributable profits. Only distributable profits can be used to pay you dividends.
—It is significant that Pearl's 'Adjusted Embedded Value Profit' forecast was not reported on by Pearl's accountants. The concept of accounting for embedded value profits is highly controversial. Embedded value profits are not generally recognised as a measure of profit by either the actuarial or the accounting professions.
—It is extraordinary that, despite all the detail in its financial defence, Pearl has not forecast its profit for 1989 on a conventional basis. You should draw your own conclusions from the absence of such a profit forecast.

Do not be misled. Pearl's forecast movement in 'embedded value' is not 'earnings'. The Increased Offer is a multiple of 28·9 times Pearl's 1988 earnings.

PEARL'S NEW DIVIDEND POLICY— INAPPROPRIATE AND MISGUIDED

Pearl has announced that, faced with the Offers from AMP, it is to change its dividend policy.

—We believe that, based on the assumptions adopted in its 'Combined Valuation', Pearl's historic rate of dividend increase cannot be sustained over the medium term without severely damaging the company's financial strength.
—Pearl has boasted that its 1988 dividend cover of 1·6 times was the highest in the FTA Insurance (Life) Sector. Its new dividend policy must result in a drastic reduction of its dividend cover.
—Pearl's previous policy, which was understandably more cautious, was far more appropriate for a company with such a poor rate of new business growth.

Pearl's new dividend policy threatens below average dividend growth, if severe damage to Pearl's financial strength is to be avoided.

PEARL'S RESPONSE— COMPLACENT AND INEFFECTUAL

Pearl has shown little or no sense of urgency in responding to the serious problems it faces.

—Pearl has provided no evidence that it is equipped to rectify its fall in market position, its poor marketing performance and its failure to capitalise on its distribution potential.
—Pearl's tentative efforts at organisational restructuring have done little or nothing to restore its market position.
—Despite acknowledging in February 1989* that "No-one in Pearl can feel complacent about the need for change", Pearl has given you no reason to believe that it has the energy or commitment to achieve that change.

Shareholders should not risk allowing Pearl to continue its long term decline to their detriment.

* Einion Holland, *Chairman of Pearl.*

AMP'S INCREASED OFFER— FINAL AND MOST GENEROUS

AMP's Increased Offer is most generous.

—The Increased Offer of 690p in cash represents:
  —a premium of 75% over 394p, the closing price on 1 June 1989, the day before the AMP Group announced its 18% holding.

—a premium of 52% over 454p, the non-goodwill element of Pearl's 'Combined Valuation'.
—an exit multiple of 28·9 times Pearl's 1988 earnings.

—The Increased Offer includes a full loan note alternative.

Obtain full value for your shares by accepting the Increased Offer.

YOUR DECISION IS SIMPLE

Accept the Increased Offer now—you cannot afford to miss the opportunity of obtaining a very generous price for your Pearl shares.

Your form of acceptance must be received by 1.00 p.m. on Tuesday, 5 December 1989.

Yours sincerely,

Ian Salmon

Chief General Manager

International

APPENDIX 4

BROAD IMPLICATIONS OF VARIOUS SHAREHOLDING LEVELS IN PEARL

% Holding	Tax	Accounts
5	Tax relief on borrowing costs available against income of AMP (U.K.) plc alone, at a rate of 25% only.	Accounted for as an investment at current stockmarket valuation.
12 (approximately)		
15		
20		Equity accounting possible.
30		
33		
50	Group tax relief (see below), not available, but equivalent relief should be possible with appropriate tax planning.	Consolidation possible.
75	Group tax relief applies, allowing borrowing costs to be relieved against not only AMP (U.K.) plc income, but also against Pearl profits.	
90		
100		

City Code, etc.	DTI Requirements	Summary
—No disclosures needed.	—No approval required. —Holding valued for solvency at lesser of cost or market value, so long as holding represents less than 2·5% of No. 1 Fund.	—Able to be treated as an investment, but little more. —Limited tax relief. —No influence on board or management, the key to adding value to the holding.
—Not more than 10% to be purchased in any seven days if thereby exceed 15%, except from single shareholder and it is only acquisition. —Disclosure required within 5 business days of exceeding 5%, and thereafter on exceeding 1% extra since last disclosure.	—Valued for solvency at 2·5% of No. 1 Fund.	—Solvency 'damage' begins to occur. —Tax relief remains limited. —Limited opportunity to bring real influence to bear on board and management.
—Not more than 10% to be purchased in any seven days except from single shareholder and it is only acquisition. —Disclosure of purchases by 12 noon on following day, on passing 15% and thereafter on exceeding 1% extra since last disclosure.	—Approval required from DTI to exceed 15%. —Valued for solvency at 2·5% of No. 1 Fund.	
—Full takeover offer required. —Must be cash (or full cash alternative). —Floor price is highest price paid in previous 12 months. —Only permitted conditions are 50% acceptance (including purchases); or reference to Monopolies and Mergers Commission. —No revisions possible after 46th day. —All sales of shares require 24 hours notice and consent of Panel, and would prevent any subsequent purchases. —Disclosure of purchases by 12 noon on following day, including prices paid.	—Valued for solvency as appropriate proportion of NTA, only.	—Solvency 'damage' greater. —Tax relief remains limited. —Growing possibility of influencing board and management. —Some danger of getting 'locked in' if takeover bid fails.
Compulsory acquisition possible.		—Likely to gain 100% from here. —Full tax relief possible. —Able to control board and management and add value.

APPENDIX 5

A SIMPLIFIED COMPUTER MODEL

As mentioned in § 5.8 a simplified computer model of Pearl was originally constructed to provide short and medium-term projections. The methodology was known to be unrefined and care was taken in drawing conclusions from the results. In view of the difficulties associated with working with published information, it was not felt necessary to take a more sophisticated approach. However, the ability to perform sensitivity analyses in a very short timescale proved invaluable as the bid progressed and we briefly discuss the models in this appendix.

The model was designed to produce 10-year projections of the revenue accounts of Pearl Group plc and of the Form 9 ratios of Pearl Assurance. The fundamental relationships were modelled so that the effect of changes in key assumptions could easily be seen. The model was programmed up in the Javelin spreadsheet programming language, and new runs could be carried out at very short notice.

The data and assumptions used were derived from published information and were consistent with those used for the appraisal valuation. The revenue accounts of the IB and OB life funds were projected, based upon the pattern of maturities shown by the DTI returns and allowing for the financial effect of new business being written. The effects of changes in bonus philosophy, investment return, premium production and mix of business, were investigated.

In addition, results were separately projected for the various other subsidiaries of Pearl Group plc and these were combined to show 10-year revenue accounts. The interaction of bonus philosophy and dividend policy could easily be analysed. We show sample output below (suitably doctored—the numbers are not realistic and are purely illustrative).

Historical and Projected Profit & Loss Account and Estate 1988–1993

Terminal bonuses decline slowly
Dividend Growth at 10%

		Premium Growth 6% Higher investment return assumption				
	1988	1989	1990	1991	1992	1993
Transfers from revenue accounts:						
Ordinary Branch	26·13	43·46	50·31	56·20	63·00	71·14
Industrial Branch	23·13	14·81	16·64	17·26	17·33	17·44
General Branch and MAT	14·68	5·70	6·00	6·40	6·80	7·20
	63·94	63·97	72·95	79·86	87·14	95·78
Shareholders investment income	5·07	6·43	6·41	6·39	6·31	6·15
Less: Expenses	0·85	0·91	0·98	1·06	1·14	1·22
	4·22	5·52	5·43	5·34	5·18	4·93
Other income	1·25	1·43	1·61	1·83	2·08	2·37
Profit before taxation	69·41	70·91	79·99	87·03	94·40	103·08
Taxation	24·29	24·82	28·00	30·46	33·04	36·08
Profit after taxation	45·12	46·09	52·00	56·57	61·36	67·00
Balance at beginning of year	38·58	48·70	37·49	26·45	13·67	−1·24
Available for appropriation	83·70	94·79	89·48	83·01	75·03	65·76
Dividends: Ordinary	35·00	57·31	63·04	69·34	76·27	83·90
Balance at end of year	48·70	37·49	26·45	13·67	−1·24	−18·14
Other Shareholders funds	135·07	145·64	156·17	166·67	177·04	187·14
Total Shareholders funds	183·77	183·12	182·61	180·34	175·79	169·01
Require NL Solv. Margin	72·35	75·57	78·94	82·49	86·21	90·11
Assets	5503	6271	6733	7225	7754	8316
Liabilities	2816	3178	3580	4027	4523	5073
Estate	2687	3093	3152	3198	3230	3243
Asset/Liability Ratio	1·95	1·97	1·88	1·79	1·71	1·64

Historical and Projected Profit & Loss Account and Estate
1994–1998

Terminal bonuses decline slowly
Dividend Growth at 10%

	Premium Growth 6% Higher investment return assumption				
	1994	1995	1996	1997	1998
Transfers from revenue accounts:					
Ordinary Branch	80·45	90·89	102·70	116·61	132·81
Industrial Branch	17·81	18·95	19·57	19·72	15·53
General Branch	7·60	8·10	8·60	9·10	9·60
	105·86	117·95	130·87	145·43	157·94
Shareholders investment income	5·92	5·60	5·22	4·75	4·20
Less: Expenses	1·31	1·41	1·52	1·63	1·75
	4·60	4·19	3·70	3·12	2·44
Other income	2·70	3·09	3·52	4·03	4·61
Profit before taxation	113·17	125·22	138·10	152·58	164·99
Taxation	39·61	43·83	48·33	53·40	57·75
Profit after taxation	73·56	81·39	89·76	99·18	107·25
Balance at beginning of year	−18·14	−36·87	−56·99	−78·90	−102·57
Available for appropriation	55·42	44·53	32·77	20·27	4·68
Dividends: Ordinary	92·29	101·52	111·67	122·84	135·12
Balance at end of year	−36·87	−56·99	−78·90	−102·57	−130·44
Other Shareholders funds	196·86	206·06	214·63	222·44	229·33
Total Shareholders funds	159·99	149·07	135·73	119·87	98·89
Required NL Solv. Margin	94·22	98·53	103·05	107·80	112·79
Assets	8929	9575	10278	11066	12072
Liabilities	5705	6405	7200	8122	9280
Estate	3224	3170	3077	2944	2791
Asset/Liability Ratio	1·57	1·49	1·43	1·36	1·30

APPENDIX 6

'WISH LIST'

TARGET ASSESSMENT

(How do they operate and what are they good at?)

Products:
- Quality?
- Range?
- Focus?
- Philosophy?
- Pricing stance?

Customers:
- Who and how many?
- Target segments and priorities?
- Geographic spread and strengths?
- Customer profile?

Image and Reputation:
- What does the market think of them?
- What do their customers think of them?
- What type and how much advertising?
- Press relations?

Corporate Values:
- What is important to them?

Management:
- Top level organisation structure?
- Key management—age, service, qualifications, previous experience, track record, remuneration package, service contracts?
- Board members—age, experience, other connections?
- Board—meeting frequency, executive/non exec., level of delegation to management?
- Mission statement—now, last 5 years, future?
- Long-term goals/plans?
- Annual goals/plans—progress in current year?
- Personnel/management philosophy—accountability and reward structure/emphasis, inbred/recruit from market?
- Language skills?
- Staff numbers, turnover and trends therein?
- Staff pension plan funding status?

Market Position:
- Now and trends over last five years?
- Profitability?
- Competitor analysis?

Distribution:
- What type?
- Sales philosophy?
- How organised—product/segment/geography, etc.?
- How do they sell?
- How managed?
- How trained and how well?
- Agent and agency manager numbers, turnover and trends?
- Reward and recognition structures?
- Client/sales force ratios?
- Productivity?
- Spread of offices? (map?)
- Computer, tax/legal, etc. support?
- Sales aids/brochure quality/appeal?

Customer Service:
- How organised—product/segment/geography, etc.?
- Service philosophy?
- Service levels and trends?

Systems Quality and Type:
- DP—hardware brands? age?
    - —PC usage?
    - —packages or home grown? age?
    - —real time?
    - —networked?
- Administrative?
- Financial?

Subsidiaries:
- Activities? (products, distribution, etc.)
- Strategic fit?

Investments:
- Philosophy?
- Asset mix? (type, geographic, etc.)
- Current MV?
- Performance *v.* market? (real/perceived)

Legislative, etc. Issues:
Problems/opportunities (e.g. EEC, languages, etc.)

Copies of Recent Documents in Public Arena

Overall:
What are they best at?
What are their most notable weaknesses?

APPENDIX 7

EXAMPLES OF BONUS PHILOSOPHY REFLECTED IN APPRAISAL VALUATIONS

1. Self-supporting bonus rates now with a target estate of $X\%$ of net premium liabilities. (X might typically be in the range of 10 to 20).
2. Self-supporting bonus rates after N years with a target estate then of $X\%$ of net premium liabilities (N might be 5, say).
3. Self-supporting bonus rates now with a target estate of zero.
4. Bonuses contained at or near current levels; new business maintained until estate is exhausted.
5. Self-supporting bonus rates in N years time with a target estate of zero, but with a current target estate equal to the support needed to maintain bonuses for N years.
6. The greater of what is produced as value to shareholders by the approaches in 1 and 4 above.

APPENDIX 8

MODELLING VALUATION OF DSS REBATE BUSINESS FOR APPRAISAL PURPOSES: POINTS TO BE CONSIDERED

1. The policy wording and sales literature are relevant.
2. Usually, once the appropriate forms have been signed, rebates for future years should come through automatically from the DSS to the office without any further action by the policyholder. He would have to take positive steps either to divert the payments to a different office or to contract back in to the state scheme.
3. A percentage of cases are rejected by DSS as ineligible.
4. Proposers seem to overestimate their income when proposing.
5. Data kept by offices are often inadequate for following through cases for measuring ineligible percentages and extent of income overstatement.
6. For an existing policyholder, future rebates depend upon:
    (a) future earnings (between upper and lower income limits),
    (b) the 2% incentive (last year is 1992/93),
    (c) quinquennial reviews by the Government Actuary of the rebate percentage, and
    (d) the age at which contracting back in to SERPS becomes attractive.
7. Much 1989 rebate business contained an element of backdating. The rebates received related to years 1987/8 and 1988/9.
8. There is a substantial timelag possible between the receipt of a proposal and receipt of the DSS rebate. For example, 1990 proposals received after 5 April 1990 will not have rebates paid by the DSS until about May 1991.
9. Offices may count the business as being written at a number of points of time, e.g.:
    (a) when the proposal and other forms are received,
    (b) when the computer record is set up,
    (c) when the DSS payment is received, and
    (d) when the DSS payment is tied up with the policy record.
10. Expenses are incurred both when the policy is set up and when the DSS rebates are subsequently received.
11. It is possible to treat the business either as pure single premium business (in which case each year's rebates are treated as new business regardless of whether they are from existing or new policyholders) or as regular business (in which case new business would be assumed to derive solely from new policyholders and future rebates from existing policyholders would be assumed to form part of the in-force).
12. The expense assumptions need to tie in with the approach adopted. For example, under the pure single premium approach, future new business costs might be lower than for 1990.

APPENDIX 9

ACTUARIAL APPRAISAL VALUATIONS

AN 'IDEAL' PRESENTATION IN DEFENCE DOCUMENTS FROM THE BIDDER'S POINT OF VIEW

1. Any appraisal valuation should be split into its three component elements.
2. An appraisal valuation should be shown for each significant company or each significant territory in the Group.
3. Bases and assumptions should be stated and the sensitivity to changes in these shown. The necessary tests of sensitivity for which bases and assumptions should be stated and the level of detail given should be "what an actuary, experienced in the use of appraisal valuations would require in order to make an informed assessment of the significance of the figures produced". On this basis, the following bases and assumptions should be stated:

   *(a) the after-tax shareholders' risk discount rates,
   *(b) details of the assumed value, risk and profitability of future new business,
   (c) the methods of valuation of assets (including deferred taxes),
   +(d) the current and future bonus philosophy (for with-profits life business),
   (e) the current and future actuarial reserving methods and bases,
   *(f) levels of expenses and the rate of expense inflation,
   *(g) levels of management charge on linked business,
   *(h) lapse or surrender rates and the levels of surrender values that will be paid,
   *(i) the rates of return to be earned on the various types of investments,
   †(j) the philosophy as to the management and/or distribution of the 'free estate' (for with-profits life business),
   (k) future mortality, especially incidence of AIDS,
   (l) tax charge and reliefs,
   (m) the allowance (if any) made for the 'locking-in' of some assets (e.g. because they are not distributable for solvency reasons, and
   (n) the methodology adopted for valuing general insurance business.

   Sensitivity analyses should be provided, demonstrating the effect on the appraisal valuation of changes in the bases and assumptions. Those marked with an asterisk should be varied for this purpose by 10% in each direction. The effect of adopting alternative philosophies should be shown in the case of the assumptions marked '†'.

4. The detailed terms of reference for the reporting actuaries should be stated.
5. The effective date of the valuation should be stated.
6. The reporting actuary should state how the relevant assumptions adopted

compare with experience over the previous two years and either they or the company's financial advisers or accountants should specifically confirm that in their opinion the assumptions are reasonable.

7. Every time the appraisal valuation is shown or referred to, it should be accompanied by the following statement, prominently presented:

   "NB. An actuarial appraisal valuation is not an estimate of the market value of the companies to which it relates. See page * for details of the bases and assumptions used for this appraisal valuation. These include assumptions as to economic and other circumstances over many years into the future. The appraisal valuation will be materially affected by changes in these circumstances. You are strongly recommended to obtain appropriate professional advice as to the meaning and significance of this valuation and the bases and assumptions on which it is calculated."

8. No use of this appraisal valuation should be made which is inconsistent with this 'warning'.

APPENDIX 10

VALUATION OF GENERAL BUSINESS OF PEARL

Our basic approach to calculating the general business and shareholders' funds components of the appraisal value is to estimate the net profits the shareholders might expect to receive in the future from these sources. The appraisal value is then the present value of these net profits obtained by discounting them at the shareholders' 'risk discount rate'.

Our appraisal value consists of three different elements as follows:

(i) A valuation of the investment income and other profits to be earned on the existing reserves for future claims ('Value of existing business').
(ii) An assessment of the profits to be earned from all sources from business to be written in the future ('Value of goodwill').
(iii) The reduced value of the shareholders' funds to allow for the fact that they cannot all be distributed immediately to the shareholders as they are partly required to support the business being written ('Value of shareholders' funds').

EXISTING BUSINESS

There are three sources of value in the existing business of Pearl as set out below:

(i) The extent to which the reserves held for future claim payments are greater or smaller than the likely amount of those payments.
(ii) The value of the future investment income on the reserves. This arises because, as is currently common in the U.K., Pearl has established reserves for future claim payments on an undiscounted basis.
(iii) The fact that it is easier to obtain renewal business from existing policyholders than new business from new policyholders.

The third item is included in the calculation of goodwill. To calculate items (i) and (ii) we first considered the reserves for future payments in respect of claims that had already occurred by the valuation date. We assessed whether these reserves were likely to be larger or smaller than the amount of the claim payments. We then estimated the expected duration to the settlement of claim. This allowed us to calculate the amount of investment income that could be expected to be earned on the reserves. We then estimated the loss ratios to which the business had been written in the past. This enabled us to assess the amount of any redundancy or deficiency in the reserves held for future claims for which premiums had already been received. The values arising from (i) and (ii) had then to be reduced to allow for tax payable on the profits of the general business.

GOODWILL

The next stage of the valuation is to calculate the profits to be earned from all sources from business to be written in the future. This requires assumptions to be made about the following:

(i) the amounts and types of business that will be written in the future,
(ii) the underwriting loss ratios to which that business will be written,
(iii) the expenses and commission to be paid for obtaining and servicing that business,
(iv) the rate of investment return assumed to be earned from receipt of a premium until its expenditure, and
(v) the delay from inception of the risk to the receipt of the premium and the delay from the occurrence of a claim to its payment.

SHAREHOLDERS' FUNDS

Currently, almost none of the shareholders' funds are needed to support the solvency margin for the life business. It is assumed that this will continue to be the case, with any capital required to expand the life business being found from inside the long-term business fund. Further it is assumed that, in line with current practice, any outside assessment of the 'strength' of the life business will be based entirely on the assets in the long-term business fund. Thus it is reasonable to assume that all the shareholders' funds are available to support the general business.

Under these assumptions the ratio of the shareholders' funds to the premiums written is a measure of the strength of a general insurance company and is usually referred to as its 'solvency margin'. At the valuation date the solvency margin of Pearl was 124% of net premiums written. We considered that a solvency margin of 50% would be fully adequate for a portfolio like Pearl's. Thus at the purchase date, 40% of the shareholders' funds was assumed to be required to support the solvency margin of the general business and thus not available for use of the shareholders. Further if the premium income grew, a portion of the investment income and capital gains from the shareholders' funds would be required to maintain the solvency margin at its current level and would thus not be available for the general use of shareholders. The assets currently and in the future required to support the solvency margin are thus 'locked-in'. This reduces the value of the shareholders' funds. This reduction, should, of course, be compensated for by the goodwill arising from writing future business. Any assets that are not locked-in were assumed to be immediately distributed to shareholders, less any tax payable as a result of such a distribution.

ABSTRACT OF THE DISCUSSION

Mr A. E. M. Fine (introducing the paper): The references in the paper to demutualisation in § 2.3.2 need up-dating. A document, dated 15 October 1990, was sent to the policyholders of Pioneer Mutual Insurance Company, which stated that the scheme involved the transfer of assets and liabilities to a new company under the ownership of Swiss Life in return for the shareholders taking a share of surplus. An amount of £15 m is involved, of which £12 m is allocated to the long-term business fund. The document contains a summary report from the independent actuary which cross-references two reports by the Appointed Actuary which were available. One of the Appointed Actuary reports describes the embedded value calculations used and the methodology and assumptions adopted. The National Mutual Life Assurance of Australasia Scheme referred to in § 2.3.2 was called off in May. A new scheme was produced, described in a document issued to policyholders on 6 August 1990. The Board obtained a report from consulting actuaries who made a proviso that shares, when placed, are appropriately priced, based on, amongst other things, actuarial appraisal values. The Scheme was approved by policyholders at a meeting on 12 September 1990.

In § 11.1.1 there is reference to bonus philosophies of offices and, with the publication of with-profits guides, the expectation that some of this information will be openly disclosed. The first series of with-profits guides has now appeared, and I can make some general observations in relation to the philosophies set out in Appendix 7. Most offices refer to using asset shares, to equity and fairness between types and generations of policyholders, and to smoothing and maintenance of appropriate levels of financial strength. Thus, in general, I suggest that most offices follow examples 1 or 2 of Appendix 7.

The extent to which actuaries should disclose to a wider audience than that of their client the bases they have used in determining values is highlighted in the paper. The Takeover Code does not, at present, involve itself in this matter, nor are there any Institute guidelines. Given this situation, the extent of the disclosure is driven by the actuary's client, or perhaps the merchant bank adviser concerned, rather than the actuary. Hstorical examples appended to the paper indicate different levels of disclosure in different circumstances. There is nothing surprising about this, given the differences between the cases concerned and different client perceptions. The actuary concerned must have primary regard for the interests of his client.

We refer to the proposals of the ABI on 'Accounting for Shareholders' Profits in Long-Term Insurance Business' in § 1.3. These complex proposals are clearly influenced both by U.S. GAAP and the paper 'Realistic Reporting of Earnings of Life Insurance Companies' discussed at the Institute of Actuaries of Australia in 1989. There seem to be two driving forces behind the ABI draft proposals: to reflect a true and fair view, particularly after the provisions of the E.C. insurance accounts directive are enacted; and to help shareholders place a value on their interest in the life business of their companies, which implicitly means giving shareholders some information on the dividend paying potential of their company in the longer term. In the light of the massive systems and other costs involved in implementing the ABI proposals we need to consider whether the two objectives are met.

Whether a true and fair view is achieved by the proposals is really for the accountants to judge, not actuaries. True and fair seems to have been first introduced in the 1948 Companies Act, and was adopted by the E.C. Council for the Fourth Directive. The concept is a legal one, and the question as to whether or not a company's financial statements comply can ultimately only be decided by the Courts. However, it is not unreasonable to regard compliance with accepted accounting principles as prima facie evidence that accounts are true and fair. There is some evidence that the accruals method proposed by the ABI does comply with accepted accounting principles. For instance, the ABI proposals would seem to conform to three of the four accounting concepts in SSAP 2, though whether the prudence concept, which is the overriding one, is conformed to is debatable, because the proposed methodology ignores statutory earnings; and it is statutory earnings which control dividends to shareholders, bonuses to policyholders, capital requirements and taxation. The existing SSAP 9 on long-term contracts is another guide, and it would seem that the proposals have been framed having regard to that statement. The U.S. equivalent of true and fair is fair presentation in conformity with GAAP, and it would be of interest to hear whether actuaries and accountants who have much experience of working with FASB 60 and 97 feel that a fair presentation emanates from these directives. I feel that a much simpler approach to true and fair would simply be to extend SSAP 10 relating to Satements of Source and Application of Funds to require an analysis of surplus for the long-term business fund of the insurance companies within the group. A further alternative approach is to simply split actuarial reserving into provisions and reserves: the former being actuarial reserves on a realistic best-estimate basis; the latter being valuation margins held in excess.

The second objective, viz. enabling shareholders to place a value on their interest, is not, in my view, achieved by the ABI proposals, even with the suggested level of disclosure. The idea that a P/E type of approach to the adjusted earnings would achieve the second objective is surely not supportable. Again, U.S. experience is of interest here. The second objective can best be met by publishing embedded values or, indeed, appraisal values, preferably with sensitivities, but certainly with disclosure of main assumptions and an analysis of movement across the year.

There are many lessons to be learned from AMP/Pearl. There are issues for the profession to consider. There is much that an office can do to prepare itself for the possibility of a hostile bid. However, if offices think that earnings increases *à la* ABI SORP should form the main part of such preparation they are deluding themselves.

The market is surely not fooled by cosmetic earnings increases. Earnings window dressing, I suspect, does not improve share prices. Surely the market is relatively sophisticated and only earnings increases that are associated with long-term cash flow will increase share prices. There are studies that show that the market evaluates management decisions based on their expected long-term cash flow impact, not on their short-term earnings impact. Managements of offices need to find ways of improving the communication of long-term cash flow potential in their businesses (appraisal values can help here). However, at the end of the day, it is those offices which use their capital and manpower resources less efficiently than others who will remain the prime take-over candidates.

Mr N. H. Taylor (opening the discussion): One of the authors was principal, and the other the actuarial adviser, in a hostile takeover. Thus we have a case study which is presented from the viewpoint of the bidder, although the authors have clearly tried to look from the defence point of view as well. The names of the two companies are not obscured—a break with tradition.

We must remember that actuaries were not only advising on the bid and defence. Others advised the Takeover Panel, firms of accountants, solicitors, merchant banks and stockbrokers. The actuaries on all sides were involved in what to them was a new, fast moving, hostile commercial situation. However, it is from the experience of the two main parties that we can learn most. The purpose of bringing this case study forward is to give us the background for a discussion on the professional issues which arise and, as the authors say, to see whether there is a need for guidance to be given. There are wider considerations than just the standards of our own individual professionalism. There are the whole sets of relationships between our profession and the other professionals, as well as the various regulatory authorities, the DTI, the Takeover Panel and the Stock Exchange. We must not forget that the result of the bid depended on the shareholders. For many of us this meant the investment managers of our companies.

I believe that, after this meeting, the Life Assurance Joint Committee (LAJC) should consider the need for, and type of, guidance—do we need a formal guidance note or do we need to strengthen our basic Memorandum on Professional Conduct? Should we enter into formal discussions with the Takeover Panel on the role of actuaries; similarly the Stock Exchange? Are there any matters which we should take up with the DTI? Is there anything we need to take up with the ABI Investment Committee?

There is a confidentiality problem, which the authors cover in § 1.12, in that not everything can be mentioned in public. This is particularly so for those whose principal effectively no longer exists. Possibly more might come out in committee which cannot be said publicly.

I will now mention some issues which I believe are important. The first concerns the boundary between professionalism and commercialism. The actuary advising on the bid or the defence is going to have his opinion coloured by the discussions in which he is involved, as well as by comments in the media, and the tough stance taken by the Takeover Panel. He is keen to be on the winning side, but there must be a limit beyond which he would be acting unprofessionally. We are not alone in this; the accountants and solicitors must have similar professional problems. Our existing Memorandum on Professional Conduct states: "A member should recognize that there is room for differences of opinion in relation to actuarial advice and must avoid any action which would unfairly injure the professional reputation of any other member. However, this is not intended to prevent criticism to the client of another member's work for that client where this is properly reasoned and felt to be justified". Client here needs to be interpreted broadly and we must always remember the reliance of third parties on our advice. The authors have mentioned independence in § 12.3. There are two positions: firstly, an unconstrained response to a client's brief; secondly, a totally unconstrained position. Do both these satisfy our definition of 'independence'?

The next issue concerns the use of embedded values and appraisal values which are being used more and more. Usually the published material has said very little about the methods and bases, even though the actuary will certainly have provided full details to his client. The report of the Embedded Values Working Party commented on this and recommended that published material should define the embedded value, state the principal elements of the basis, and refer to changes in the basis or methods since the last report. In his Presidential Address in 1988, Roger Corley stressed the need for disclosure, picking up a quotation from J. B. H. Pegler's Address 20 years earlier: "It is the actuary's job to set out the nature of his assumptions and the reasons for them in terms intelligible to the layman . . .". The appraisal value contained in the defence document did contain some information on methods and bases, certainly not in as much detail as I would have liked. It is a question of how much the client or his merchant bank wish to disclose. If we are to give guidance here, I presume that we would need to discuss it with the Takeover Panel, a suggestion made in § 8.4. Should this be done?

I suggest we try to improve our terminology. Expressions like 'existing structure value' could be clarified.There are problems concerning data. At the time of the bid, Pearl's Schedule 5 figures were four years old and their new business had changed considerably. I query whether the investing public is well served by the published information being so out-of-date as to defy rigorous analysis by those—actuaries, accountants, stockbrokers, financial journalists, for instance—who could influence the course of events.

In § 13.8 the position of policyholders in a merger is compared with those involved in a company which gets new shareholders. In a merger, the full force of Section 49 of the Insurance Companies Act comes into play, requiring, amongst other things, an independent actuary's report—usually accompanied by actuarial reports on behalf of the two parties to the merger—and a High Court hearing at which the various parties—policyholders, employees, Secretary of State and others—have a right to be heard if they allege they will be adversely affected. When there is a takeover the policyholders have no rights, although the DTI does, of course, have to approve the new controllers, and has powers to intervene. In the case of the Pearl, AMP made it abundantly plain that the management culture of the company was to be changed. Pearl is an 80/20 company according to its articles, but is currently on about a 90/10 basis. Even if they can only move at the DTI standard of $\frac{1}{2}$% a year, there is nothing to stop AMP from gradually taking an increased share of the surplus, something they may be more interested in doing than the previous shareholders. The with-profits policyholders are almost pawns in this. Should the Institute and Faculty make recommendations to change the law so that policyholders get enhanced protection?

Mr N. J. Dumbreck: I start by picking up the opener's last point, which received very little attention at the time of the takeover and is not referred to directly in the paper; that is the ownership of the free estate of the target company. Paragraph 5.6.7 states that 10% of distributed surplus of the target company's main life subsidiary goes to the shareholders' profit and loss account. That is an accurate description of the current position, but the articles of association permit up to 20% of the distributed surplus of the Ordinary Branch fund to be allocated to shareholders, and do not specify any maximum proportion in respect of the Industrial Branch surplus. Consequently, it appears to be open to the new board of Pearl to increase the shareholders' proportion, within the constraints imposed by Section 30 of the Insurance Companies Act 1982. This means either taking the gradual low-profile route, increasing the proportion by $\frac{1}{2}$% p.a., or publishing a statement to policyholders and making a larger, once and for all adjustment.

The available evidence suggests that the total assets of the long-term fund of the main life company exceed the asset shares of the present generation of policyholders by a substantial margin—in other words, there is a large orphan estate, so the shareholders' share of profits could be increased substantially without affecting the bonus prospects or reasonable expectations of the current with-profits policyholders. The DTI does not seem to have a clear policy as to what is and what is not acceptable in this area, but generally appears willing to allow changes to profit-sharing arrangements, unless a significant number of policyholders object. Apathy usually means that changes go through. Indeed, it is doubtful whether the DTI can prevent a change unless there is a genuine threat to policyholders' reasonable expectations. Suppose that the new owners could and did increase the profit-sharing proportion from 10% to 20%. This would make a huge difference to the appraisal value. The element relating to in-force business would more or less double overnight, and although the higher profit share might have some effect on volumes of new with-profits business, the goodwill value would also increase substantially. In these circumstances the bid price would look very cheap.

This element of the valuation of the company far outweighs most of the other aspects which are given attention in the paper, so why was it not mentioned at the time of the bid? Well, there was clearly no reason for the bidder to mention it. The target company directors could have used it in their defence, but here the problem was presumably one of credibility—if it was a good idea which would have substantial benefits for shareholders, why had not the company already done something about it? Surely this puts the directors of other proprietary companies in a difficult position. If they do not maximise the value of the shareholders' share of profits from with-profits business, they risk takeover by a predator who will. Some companies have started to make noises to the effect that the current profit-sharing ratio does not necessarily dictate ownership of the free estate. There is a good deal of pressure to give more to shareholders and less to policyholders. This must put the Appointed Actuaries of the companies involved in an unenviable position. I suspect this is one of the most problematic issues life assurance actuaries will have to face over the next few years.

The paper describes the role of the Takeover Panel and Takeover Code in the bid. It does not mention that the Takeover Panel sought advice on the use of appraisal values from our firm of consulting actuaries not otherwise involved with the bid. At that point the bidder's advisers had insisted that the publication of an appraisal value and of embedded value earnings would contravene the Takeover Code because it would seriously mislead shareholders, and should not be permitted. The target's advisers strongly disputed this view. It was agreed with the Takeover Panel that an appraisal value was, in principle, a legitimate weapon in defending against a bid for an insurance company. Attention then shifted to questions of presentation. The bidder's advisers wanted a detailed statement of all the assumptions used; the target's advisers did not wish any assumptions to be stated and argued that much of the information was confidential. However, Rule 28.2 of the Takeover Code requires that when a forecast is published, underlying assumptions must be stated. An appraisal value was deemed to be a forecast for this purpose. The remaining debate was about the degree of detail required. It seems to me that the end result was a reasonable compromise and one which sets a suitable precedent for future contested bids. I do not believe that there is a pressing need for the Institute of Actuaries to make recommendations or issue guidance notes on this subject.

Mr I. C. Smart: Our firm was also involved in this takeover. We think that the major issues raised by the paper are five: terminology; methodology; disclosure; communication and independence. These are linked issues, best addressed by either an Institute working party or by the Joint Committee, where differing views and approaches can be thoroughly aired before public positions are taken:

(1) *Terminology.* The concepts of profit testing, embedded values, written business values and appraisal values have become widely accepted within the profession, and increasingly within the wider investment community. Links are often established between an embedded value and an appraisal value either by means of a multiplier applied to a written business value, or by projection techniques. Transaction or market values may differ from appraisal values. We have a plethora of terms which not only may be used by different advisers in different ways, but may have fundamentally different levels of actuarial judgement involved in them. The picture is rendered more complex by the difficulty in defining the boundaries between net assets, embedded value less net assets or in-force value and goodwill. Examples are the value to be placed on the estate in a with-profits office, and the value to be placed on tax assets. No doubt

each of us, engaged in a significant amount of advice to predators, defenders and their advisers, have a well-established and professionally applied set of concepts, but are these concepts uniform between actuaries?

(2) *Methodology.* One fundamental issue is the treatment of the estate; not only to what extent the residual estate can be regarded as belonging to shareholders, but also how the working and the residual estate are both to be used. For example, what levels of bonus will unlock the working estate, over what time period and how dependent is the answer upon new business? The second fundamental issue is that of goodwill. I believe the profession can respond to the challenge of deriving goodwill in two ways: either by projecting new business at an assumed pattern of future growth and choosing a discount rate to capitalise the resultant profits, or by building a database of historic, actual relationships between goodwill and written business value in order to arrive at a multiplier. Those of us who focus on the latter route are aware of the need to pay close attention to those factors which modify standard multipliers, for example, the nature of the distribution system—and its quality—as well as the prospects for the product mix being offered and the prices charged for the products being sold. Different levels of disclosure are required, depending upon the approach adopted. This highlights the need in all actuarial work to blend arithmetic with judgement.

(3) *Disclosure.* The need for and extent of disclosure is driven by the methodology adopted. We must, however, avoid abrogating responsibility for the advice we give by merely presenting a range of values and assumptions and inviting our clients to choose the one they feel best fits their commercial interests. The actuarial profession needs to take a position on this: disclosure of sensitivity to varying future experience is one thing; reducing ourselves to highly skilled arithmeticians is another. Whatever way we go, our publics—be they predators, defenders, advisers or commentators—need to be able to grasp what we are telling them.

(4) *Communication.* Our arguments should not be weak, and will not be if we first take the trouble to find out what our clients are interested in, and then help them to relate that to our methodology. Communication is not only an outwards process, it involves careful listening. This has not always been our profession's strongest point.

(5) *Independence.* If the President considers establishing a working party or reference to the Joint Committee, there is the issue of independence. Is it possible to be independent when engaged by one party? Sometimes one is asked for fairness opinions, which are commissioned by both parties and so are presumably independent, but independence is a wider issue than fairness opinions.

Mr M. J. Yeo: I wish to comment on the problems facing the shareholders of the target company. They are the ones who determine the outcome of a bid, and, implicitly, the relevance of any published appraisal value.

In this case study the influence of the press and analysts, covered in Section 12, should not be underestimated. The Lex column in the *Financial Times* on 16 October 1989 said, "A little knowledge is a dangerous thing: some of the last fortnight's punditry about why AMP should pay more than £7 per share for Pearl has verged on the lethal. The waffle stems from the idea that you can firmly price a life assurance company with a magic formula called an appraisal value. The danger is that life companies will start cooking their books with variations on the idea". This item will have been read far more widely by fund managers than the defence document itself. It is, therefore, hardly surprising that, when the appraisal value was eventually published four weeks later, it was greeted with such scepticism. I think it is a matter of great regret that the publication of the appraisal value was delayed for so long.

The quality of advice from investment analysts and their salesmen was very variable. Some of it was similar in tone to the AMP letter contained in Appendix 3, looking only at multiples of statutory earnings and raising doubts about Pearl's future dividend policy. Others, however, would have welcomed the opportunity to produce appraisal values on their own bases. As no indication of the sensitivity of the published appraisal value to changes in assumptions was given, it was only possible for these analysts to produce very approximate valuations.

The paper suggests that the problems of life offices are in some way different to those of other companies, and that special consideration needs to be given to them in the Takeover Code. However, there are similarities with oil companies, particularly exploration and production companies, whose valuation can be built up in a similar fashion to life office appraisal values using discounted cash flows, including a goodwill element. Investment analysts are able to produce their own valuations based on their own assumptions because of the greater availability of information. Another very interesting recent example was the prospectus for the Eurotunnel rights issue. In this, profits and cash flow projections were given (for periods of up to 52 years ahead) on stated assumptions, which were accompanied by over two pages of sensitivity analysis. This was given in such detail that investment analysts were able to construct their own models and produce their own estimates of projected revenues. From the viewpoint of a shareholder, this is the standard that I think should be aimed at. Sufficient information on sensitivities should be given to allow independent estimates of valuations based on different assumptions.

There are, I believe, other companies that are financially strong, perceived as relatively undynamic and with a large sales force that fit the characteristics given in § 5.3 for a potential U.K. acquisition. It is to be hoped that the lessons from the demise of Pearl are learnt in time to prevent a repetition. However, I fear that the extra complexities introduced by the ABI's proposals on life profit reporting would not improve matters for many years.

Mr P. J. Turvey: There is a need for debate about the role of the actuary compared to the role of a stockbroker in valuing a life insurance company. In my view, stockbrokers and merchant bankers advise on price. They advise a principal who is buying or selling an insurance company about the price at which he should deal. In contrast, actuaries determine value and not price, and in their professional capacity they should not offer buy or sell recommendations. My own preferred approach is to tell the client that, if the future experience of a company is such and such, and an investor pays a price of X, then the long-term yield on his investment will be Y. I leave it to the client to determine his bargaining position by reference to various possible combinations of X and Y. The Pearl defence document refers to the possibility of a 'premium for control'. I would rather say that, if you pay X plus something, then the prospective yield reduces from Y to Y minus something.

The use of multipliers based upon market norms to evaluate goodwill has no merit at all under this approach. The use of multipliers based on market data can only be an attempt to ensure that the price paid is consistent with the prices paid in comparable recent transactions—that is, if there are any that really are comparable. In any case, recent experience suggests that this method frequently produces prices which the purchaser subsequently regrets. Prices may be consistent, but this is no use if they lead to unsound investment decisions.

I agree with the authors that an actuary publishing an appraisal value for the purpose of informing an actual or potential investor should provide a much higher degree of disclosure. An investor can only make an intelligent decision if he is provided with an appraisal value together with full details of the technical basis, including the treatment of the estate, and many other items which have been mentioned; sensitivity tests; and appropriate supporting documentation and interpretation. Actuaries expect to provide this information when advising a single buyer or seller, and the need is exactly the same when there are multiple sellers (such as in a bid defence situation) or multiple buyers (such as in a new issue) or indeed multiple existing investors, as in the case of an annual report.

Mr Yeo drew attention to the very useful precedent set by the Eurotunnel rights issue. If that level of detail is appropriate for a company trying to raise £500 m of new capital for a long-term business which has many similarities with life assurance, this strongly suggests that a comparable level of information would be material in a document which Pearl shareholders were asked to take into account when considering a £1 billion bid for their company.

I now quote from the Eurotunnel prospectus, which contains a health warning when dealing with profit forecasts: "The projected returns . . . are based on the directors' projections . . . and have been prepared . . . for illustrative purposes. They relate to periods of up to 52 years ahead and do not constitute a forecast; they will be materially affected by changes in economic and other circumstances. . . . As indicated in the sensitivity analysis . . . returns to investors could be affected by factors partially or entirely outside Eurotunnel's control. While the directors consider that the assumptions upon which the projections are based are reasonable, it must be realised that the reliance to be placed on them is a matter of individual judgement." I believe that wording of this kind should accompany any appraisal value produced by actuaries for public consumption.

Mr A. Duval: This paper concerns the successful takeover of a proprietary insurance company by a mutual life company. Because AMP is mutual, the consideration of over £1 billion was in cash or loan notes, and the Pearl shares now form a very substantial part of AMP's total investments, all of which, it should be remembered, are held for the benefit of AMP's policyholders.

This raises the very important question as to how far it is proper for the directors of a mutual life company to use its policyholders' funds for the purpose of obtaining control of another insurance company. The directors of a mutual life company are trustees of the policyholders' funds and, as trustees, are under a legal duty to invest those funds in what they honestly consider to be the best interests of the policyholders. In this case, AMP paid 175% of the market price of Pearl shares immediately before the preliminaries to the takeover offer, and stated that the offer included 'an extremely generous premium for control'. Admittedly, AMP paid less than Pearl's own appraisal value, but what matters to AMP policyholders is how the return on the investment in Pearl shares will compare with the return on the £1 billion of other investments which AMP could have held if it had not bought Pearl. AMP may get some tax advantages from consolidating with Pearl. The market may also have undervalued Pearl to some extent, although no more than similar insurance companies, and nothing like to the extent that embedded or appraisal values may suggest. The market is well aware that life profits are deferred during times of growth, because of life assurance reserving requirements.

If AMP is going to obtain a return on its investment in Pearl comparable to what it could have obtained elsewhere, and without detriment to Pearl's policyholders, it is going to have to increase Pearl's future profits substantially—probably by something like 50% above the level that Pearl would have achieved if it had not been taken over. I have assumed that the shareholders' proportion of profits would not be doubled and, if there were any suggestion of that kind, I would hope that the DTI would intervene because of the gross change in policyholders' expectations, despite the terms of Pearl's articles. Can AMP directors reasonably expect that such an increase in Pearl's profits can be achieved? AMP's performance in the U.K. and Australia has not been above average, whilst Pearl's results have been reasonably in line with its competitors. AMP's criticisms of Pearl have been of slow growth of new business rather than of profits, and we all know how expensive attempts at increasing new business can be.

I also found it disturbing that in Section 5, dealing with AMP's reasons for making the bid, there is not a word about benefits to AMP's policyholders, and yet this is the primary duty of AMP's directors. What particularly interests me in matters such as this is the role of the DTI. Presumably the DTI would step in if a grossly excessive bid were made, because it would be clearly detrimental to the policyholders in the bidding mutual company, and a breach of duty by that company's directors. The DTI did not step in in this case, so presumably AMP must have satisfied it that its directors—considering only the interests of AMP policyholders and disregarding all other considerations—honestly believed that buying the whole of Pearl's shares was in the best interests of AMP's policyholders. It would be interesting to know what tests the DTI carried out, what criteria the DTI used and generally how they were satisfied that the AMP directors honestly held that belief, particularly as there appears to be little evidence, either in this paper or elsewhere, on which that honest belief could be founded. I strongly suggest that the Institute, together with the DTI, consider very carefully the clarification of proper standards for the use of policyholders' funds in takeovers.

Mr R. P. Walther: On four separate occasions the authors refer to the threat of legal action emanating from actuarial advice or actuarial judgement in the course of a takeover. I hope and believe that their fears are overstated. Unlike the U.S.A., shareholders in the U.K. have been very slow to resort to the law in cases where they have felt damaged. The Takeover Panel, although it is not statutory, works well, and its judgements are accepted. I would hate to see the U.K. go the same way as the U.S.A. I shall be arguing for an open approach, and I would be very concerned if excessive caution about possible legal action was to lead to a refusal to provide all relevant information to shareholders.

I believe that the authors had a fairly easy job. Their client was a mutual office in Australia, and was bidding cash. All the authors had to do, therefore, was to advise a price sufficiently high for the Pearl shareholders to accept. If AMP had been proprietary, then its shareholders might have worried about paying too much for Pearl, but I am sure its policyholders would never seriously object whatever price was paid. A cash bid is much more straightforward than a bid involving equity, since for a cash bid all a shareholder has to do is to determine whether the cash price he is offered represents good value against the flow of income that he would otherwise receive. He does not have to consider the quality of the management of the bidding company. If a cash bid is high enough institutional shareholders have to accept it. They cannot, and should not, consider the national interest; they have to make a commercial judgement for their clients. The Pearl bid contains elements of national interest. In the last five years, we have seen several cash bids for U.K. companies and U.K. insurance companies from overseas countries, where it would be impossible for an equivalent U.K. company to have made a cash bid and gained control of any company. Is it right that a large mutual company in Australia, with a substantial share of the market and able to earn much better profit margins than its equivalents in the U.K., can bid cash for Pearl? It is the Government, not shareholders, who must provide an answer.

The most revealing passage in the paper comes in §5.6.7. "10% of distributed surplus goes to shareholders' profit and loss account. Future distributed surpluses depend on the bonus philosophy adopted. Prior to the takeover, there was minimal public knowledge of the Pearl's bonus philosophy." If this statement is correct, then the level of communication between Pearl and its shareholders may have been inadequate.

There is much rubbish talked about short termism in the context of institutional investment. The charge made by critics is ill-defined; the reason for any current lack of capital investment is not a concern about shareholders' attitudes, but the worries of boards and their finance directors that the rates of interest and of inflation are too high. The most important antidote to short termism is good two-way communication at a very senior level. This means not short-term price sensitive information; but management's longer-term objectives. Such a dialogue will enable shareholders to gain a better appreciation of management's objectives, the problems confronting them and the quality of those involved. It will also focus the attention of management on the expectations and requirements of investors. Such a process of communication is not easy, and demands much top management time, both of the company and of investors. However, I would argue that any company that keeps its shareholders properly informed in this way will be less likely to succumb to a hostile cash takeover. My advice to the Appointed Actuary of any proprietary life office would be to keep his shareholders properly and consistently informed of his company's progress.

Mr W. S. Rugland, F.S.A.: In the U.S.A., where I practise as a life insurance company consultant, we have had a similar problem with reliance on multiples. In the way we define GAAP in the U.S.A., multiples of GAAP earnings should be a reasonable basis to estimate value, since GAAP recasts actual available earnings into a smooth earnings pattern. GAAP is required of all proprietary companies which are traded on an exchange, and mutual companies do not have to report GAAP earnings. Ten years ago, U.S. merchant bankers focused their marketing efforts on GAAP multiples; now, seldom do they bring a company to market without an actuarial appraisal, and, if they do, the serious buyer proceeds to obtain its own appraisal. The dichotomy is troublesome to me; stock market analysts in the U.S.A. use a performance measure which company purchasers have found to be an insufficient measure of value.

In making deals for life insurance companies in the U.S.A., the final determinant is the expected yield for the bidder on the price being paid. In this calculation, the numerator is the present value of released profits; that is, profits available for use elsewhere. Profits are not released until they are free for release, based on U.S. statutory accounting and accompanying regulation.

With respect to goodwill, or future business values, this value, when discounted at desired yield rates, has been negative many times in recent U.S. appraisals. An alternative approach to estimate the value of a company's production capacity has been to build a productivity model. For tied agent companies, this would reflect the capacity to recruit, hire and retain producers. The bidder can then place value on this capacity as deemed appropriate.

In the U.S.A., the Actuarial Standards Board is working on a standard of practice for actuarial appraisals of insurance companies, segments of insurance companies, and/or blocks of insurance contracts. In April 1990 an exposure draft was released for a comment period which ended on 1 September. The working party is reviewing 38 comment letters.

In terms of the situation defined in the paper, hostile takeovers are not a likely event in the U.S.A. In nearly every situation hostile initiations have resulted in friendly takeovers; the existing board has held out for an agreeable amount to be finally offered. Then both parties have approached the regulators to be blessed. Entrenched management has unique clout in the diverse U.S. regulatory maze, and without its support, approval of a life insurance proprietary transfer is very difficult.

Mr D. Keeler: I worked as a consultant for the defence, and I shall focus my remarks on the conflicts and the pressure that an actuary may face in a takeover situation—primarily from this perspective. I am disappointed that the authors working for the predator and as his adviser still chose to focus, perhaps speculate, on the defence aspects, rather than giving us the benefit of their own experience.

A consulting actuary working in a takeover situation will typically issue reports to his principal—either the predator, defender or, possibly, a financial adviser to one of them. Such reports will disclose the bases and assumptions used to arrive at the conclusions. The extent to which these bases and assumptions are published in circulars to shareholders is a legal and commercial decision for the directors to determine; but the consulting actuary still has a professional duty to ensure that the onward presentation of his advice is not misleading. Naturally, the directors will wish to present such advice in the most favourable way to assist their cause. Here it is important that the consulting actuary is present at drafting meetings until the circulars are finalised—which may be at the printers. The verification process described in § 7.3 helps the consulting actuary to resist pressure, for it is likely that he will need to support all statements of an actuarial nature contained in the circular. In such situations, the consulting actuary will receive support from a number of sources: from the active and ongoing professional standards policy of his firm; from his firm's reputation; from his fellow partners; from his firm's external lawyers (in matters relating to the Takeover Code) and from the Institute's Memorandum on Professional Conduct and Practice. It is even more helpful if one's firm is seen to maintain a consistent approach in such matters.

The level of disclosure published wth the appraisal value served to enhance the credibility of the valuation, but did not prevent an unsubstantiated assertion that, "some of the key bases and assumptions used . . . are distinctly optimistic". If such responses are allowed, then how can one substantiate the assumptions to be used in any sensitivity analysis? I am not suggesting that such analyses may not one day rightly become part of a defence document, but that, at present, the directors of the defender would be most concerned that publication would undermine the credibility of the valuation and mislead their shareholders without wider acceptance of the purpose of the sensitivity analysis and higher standards on the quality of response allowed.

The professional issues do not solely relate to the appraisal value. The third AMP circular to Pearl shareholders dated 21 November 1989 contained a number of references to 'financial strength', which was defined to be the Form 9 ratio from the DTI returns. The extent to which the Institute is concerned about the misleading use of this ratio was clearly demonstrated in Lyon's paper (and subsequent discussion) (*J.I.A.* **115**, 349). If such statements are to be included in circulars to shareholders, then, perhaps, there is a need within the circular for an independent actuary to specifically support them. The attention of the Takeover Panel should have been drawn to this point. Public independent verification of the actuarial statements contained in circulars to shareholders may remove some of the pressure on actuaries who are also directors of the predator or defender.

The Takeover Panel does not have many opportunities to consider a hostile takeover of a life assurance company. It had an extremely short time to consider the actuarial arguments put to it by both sides. I hope that the Panel would welcome an initiative by the Institute and Faculty to help to draw up guidelines on the information to be sent to shareholders. Such assistance should allow the Panel to take a more informed view of whether statements made in circulars to shareholders are misleading. Guidelines would also add support to actuaries against the pressures which the authors are so concerned about. General insurance business should also be included in any initiative, to avoid having to hold a similar debate with the Takeover Panel in a live situation.

Mr M. Arnold (in a written contribution which was read to the meeting): I question whether the Institute is altogether wise in breaking with tradition and allowing a paper featuring an actual live case study, because it might cause future bidders and targets to be less than totally open and frank with their actuarial adviser.

I strongly support the call for more disclosure of actuarial bases for embedded values, but not to the same extent for appraisal values. More important than any given actuarial basis, however, is the purpose of the valuation. Right from the start of our examinations we are taught the overriding importance of establishing the purpose for which an actuarial valuation is to be carried out as a pre-requisite to establishing the bases to be adopted. Thus the calculation of an appraisal value or embedded value in one context and its use in another can be misleading, if not dangerous. Any proposed Institute guidance notes in this area must address this dilemma.

Paragraphs 1.6 to 1.9 call for more disclosure of appraisal values, and refer to the use of multipliers in these calculations. Here there is a clear distinction between embedded values (or any other form of profit recognition) on the one hand, and appraisal values, which include the more subjective element of goodwill, on the other. Subject to the purpose of the valuation, I favour greater disclosure in the case of embedded values, but not necessarily so in estimating the value of the goodwill element. I am not aware of multipliers being used for embedded values or for any other form of accrued profit recognition, even though they are used frequently in the valuation of goodwill. Let us consider, for example, that the bidder may perceive a particular and perhaps original way of maximising current sales outlets, and this leads him to place a higher value on goodwill than would his target. This is an individualised concept and differs from the more precise calculation of the value of the existing business in its existing circumstance. It is exemplified by many of the comments made in the paper about the case study under reference. I am not aware of any other type of business where the Stock Exchange or any other regulatory authority (nor indeed any other professional body) requires disclosure of how the value of 'goodwill' is arrived at.

Although § 5.6.4 singles out DSS rebates, which present a special problem, similar considerations could apply in the case of many new product launches.

In Section 8 it should be noted that, under the ABI proposals, the locking in of capital would not give rise to any devaluation of the capital so absorbed. Paragraph 8.3 implies that the economic assumptions are of overriding importance; but surely lapse and surrender rates would also be extremely sensitive. Section 10 introduces an interesting and novel dimension, and I believe that insurance companies should attempt to comply with other general rules including the Takeover Code. We gain little and could lose much by always claiming we are different or somehow special. Why not make profit forecasts? Why not make it clear to the public that we are the technical experts? In § 12.3 clearly neither firm of actuaries was independent—should they not have made that clear? If we are to infer from § 13.8 that the actuary for the bidder need not have the interests of the target's policyholders strongly to the fore, this gives cause for concern. I am not sure whether or not the authors meant that.

Mr D. M. Gordon: The authors have raised a number of issues that are of commercial as well as professional significance. At the time that AMP made its bid for the Pearl, I was the Appointed Actuary and a director of the Pearl and I still hold both of these positions. My comments come from these perspectives.

When a bid is made for a quoted U.K. company, the company becomes subject to the rules of the Takeover Code and to certain legislation. It is, therefore, necessary for the company to appoint a number of professional advisers. The rules of the Takeover Code provide that the company has to respond to the bid within a tight timescale. Therefore, considerable pressure is put on the company when trying to construct its defence.

In considering its response to the AMP bid, there were a number of factors that the Pearl had to consider. Two of them are particularly relevant to this discussion. The first was how to provide the shareholders with appropriate information in order that they did not sell their shares too cheaply. The Pearl board recognised that it could not reject every increase in the bid price made by AMP, and that, if the bid was raised above a certain level, the board would have had to recommend it to the shareholders. The second point is the position of the policyholders of the Pearl. From the point of view of the Appointed Actuary of a life company that is the subject of a hostile bid, the position of the policyholders is of paramount importance. I would, therefore, support the points made in § 13.8. In the case of the Pearl, the policyholders have a dominant financial position in the business, but there were a number of important questions relating to the bid that I was not able to obtain answers to until after AMP gained control of the Pearl. It would certainly have made my task easier if, at the time the bid was made, I had, for example, known what AMP's plans were for expanding the business of the Pearl; how they intended to finance the acquisition, bearing in mind their mutual status; and how the position of the Pearl's Appointed Actuary would be affected by the takeover.

Due diligence on the part of the professional advisers appointed by a company that is the subject of a hostile bid requires that they consider all of the options available to the company. In the case of a life company the process would involve the Appointed Actuary and it could create professional difficulties for him. In my case, I was very fortunate that, at the time that AMP mounted its bid for the Pearl, the four executive directors of Pearl Group plc, including the chairman and the chief general manager, were all actuaries.

All of the documents issued to the shareholders by the Pearl were vetted by the company's solicitors, and it was necessary for every statement in the documents to be substantiated. One of my roles was to ensure that no statements were made that would adversely affect the reasonable expectations of Pearl policyholders. I also had to provide some of the evidence to substantiate the statements made.

One of the key elements of Pearl's defence was the appraisal value produced by our consulting actuaries. I took the view that, whilst the appraisal was being carried out, my role in this process was solely to provide any information required. When the report on the appraisal value was presented to the Pearl board, I was, however, one of the directors who had to consider it. Fortunately, this did not raise any conflicts of interest for me, but there is potential for doing so. In §7 of Appendix 9, the authors suggest that a health warning should accompany the appraisal valuation. I feel that there would be practical problems for all of the shareholders in obtaining appropriate professional advice. In particular, the Pearl had a large number of private shareholders for whom it might not have been cost-effective to obtain such advice.

A hostile bid for a company triggers an adversarial contest, in which each side tries to minimise the impact of the arguments put forward by the other side. This is a different situation from that which arises when a non-quoted life company is sold privately. Therefore, if the Institute were to consider issuing guidance notes, it would not only need to have regard to the position of the actuaries involved, but it would also need to consider how its actions would affect the playing field.

Mr P. J. Twyman: For many years the profession has concentrated, quite rightly, on the valuation of life insurance liabilities for the purposes of solvency, distribution of surplus and the like, taking into account policyholder expectations. Whilst there have been a number of papers on valuation taking into account the owners' interests, there are none, that I am aware of, that traverse all the issues, including different values to different owners, a concept of standardising to market values, takeover codes, the public interest and public relations, regulatory authorities and professional conduct when acting for commercial adversaries.

I should like to lay to ground some misapprehensions. The first of these is that AMP could unilaterally move from the 90/10 profit split to an 80/20 split. In fact, we have given undertakings that there is no current intention to do this. The other is that companies operating in Australia have very fat operating margins.

As the Appointed Actuary for AMP, I should like to add some comments on policyholder expectations and the management consequences that follow. We have a number of ways of viewing our role in this transaction, and here I should like to cover just one. From a policyholder point of view, we consider an acquisition like this to be very little different to the writing of a block of new business. Each, in its own way, requires an outlay of capital; there are solvency implications; and most of the conventional reasons for writing more new business also apply to a transaction like this. The acquisition had to be profitable and it involved a considerable amount of my time.

Turning to the future, current annual valuations of liabilities try to allow for the orderly emergence of surplus, so that all generations of AMP policyholders are treated equitably. Concepts such as Zillmer and Sprague seek to deal with the impact of new business strain. In a similar way the valuation of the AMP policyholders' investment in Pearl shares needs special treatment, so that current AMP policyholders are treated equitably. If we are to use the DTI solvency value, there would be considerable strain and very little equity for AMP policyholders. Accordingly, we seek to use a modified appraisal value of Pearl, based on a willing buyer and a willing seller.

In a conventional setting, a new block of participating business is treated on a basis which is equitable with existing blocks of business. Although existing blocks of business finance new blocks, one does not seek to obtain a disproportionately high return for the existing blocks from the new block of business, and vice versa. A major responsibility for any Appointed Actuary is to ensure that the largely invisible transfers between one generation of policyholders and the next are fair and equitable. In exactly the same way, we seek to ensure that the transfers, whether they are dividends, shared costs or solvency support, between AMP policyholders and Pearl policyholders will also be fair, with neither gaining an advantage from the other. The major difference from the conventional setting is that the transfers in this particular case cross a corporate structure boundary between AMP policyholders, acting as shareholders, and Pearl policyholders.

This means that, in a conceptual sense, all the policyholders in the AMP Group are seen as equal and interdependent. There is no implication that one block owns the other. The issues raised by this approach are fundamental to the operations of the total business, and not all of them have been fully resolved. For example, it leads to special considerations for the two estates (§ 8.1.2 refers), for the relationship between the two Appointed Actuaries and for management attitudes and strategy.

Mr O. F. Roach: The discussion has not addressed one matter about which I feel strongly. It raises the conflict between the perceptions of a trader and the perceptions of an actuarial adviser. Responsibility ultimately lies with the defending and offering boards respectively, not with the actuarial advisers. The authors assign too high a level of responsibility to the actuaries, and many of the speakers seem to have done so as well.

Consider property valuers. We expect a property valuer, in valuing a building, to produce a value that reflects current market conditions. These will not necessarily reflect an actuarial type valuation of the rent flows. There are fashions in property investment and the value will be higher or lower than a technical valuation according to the current fashion. Property values boom and stagnate. Market values determined by traders are likely to be very different from actuarial values, particularly where there is a thin market. My recent experience has been in non-life insurance and reinsurance, and we have seen satellite launch risks go from 6% to 30% almost overnight. They have gradually fallen to 25%, then 20% and they are now down to 15%. Do you want your actuarial adviser to tell you what the market is charging for these risks, or do you want to know what the market should be charging for them? I think you need both, but if you are going to trade, you had better be pretty close to the market.

A stock market crash is a collapse of opinion and sentiment. It is not a collapse in real, intrinsic value. Do you want your actuarial adviser to give you the same answer before and after the crash, and how does he meet professional guidelines? The application of professional standards to actuarial advisers in an environment when the market has no intrinsic underlying logic must be handled carefully. Either the actuary produces the trend value and is out of line with the market, or he produces the market value and is seen to be wrong afterwards when fashions change. The AMP policyholders will either get an enormous benefit out of this investment or they will make a loss if they have not paid the right price. I do not know which way it is wrong.

There are several major issues for any professional guidance: all assumptions should be disclosed, the sensitivity of results to changes in assumption should be disclosed, and the range of variability intrinsic in the business must be addressed. This last depends on the effective gearing of the investors' funds. It is higher for the run-off of Lloyd's Syndicates, for example, than it might be for investors in a with-profits policy portfolio. The internal consistency of the assumptions also needs to be demonstrated, and the nature of the estimate defined.

Mr J. Plymen: I want to comment on the appraisal values from the point of view of an analyst rather than a consulting actuary.

When the appraisal value was published, one journalist in particular took a very poor view of it and I agree with him. The appraisal value, which is based on valuing a year's new business and putting so many years' purchase on to it, is not an actuarial calculation. Look at what you have to work with.

To begin with, you have the new business figures for certain broad classes. New business figures published by the company in the annual report are almost invariably different both from the actual new business that goes onto the books and into the DTI Returns and are not in sufficient detail. How can one say what multiple to put on the flow of a particular type of new business? The whole distribution system is changing.

I do not see any sense in this method of calculating appraisal values and the actuarial profession should not use it. There is a simple way to do it, on the basis that everything is level; that new business received just balances business going out. Then you look into the trends of the new business and the exits, getting the long-term rate of growth of the whole business. That enables you to adjust appropriately the valuation of the level business. The journalist was quite right to cast doubt on the appraisal value, because it is so difficult for a non-actuary to understand. If it had been worked out by my method then it would be understandable.

Mr R. M. Harvey: My comments are based on experience accumulated over 20 years as a stockbroker, providing advice either to clients or directly to the insurance companies concerned in nearly all of the mergers or takeovers to which reference is made in the paper.

Great care is called for in valuing any business during a merger or takeover. In the enthusiasm of merger discussions, and particularly in the heat of a takeover battle, concepts of value can become subordinated to decisions based on long-term strategic views (often through rose-tinted glasses) and issues of corporate pride. Mergers often take place during a period when trading conditions are exceptionally difficult, while, on the other hand, takeovers at over-inflated prices will usually be seen after a period of buoyant conditions when projections of investment returns and sales are at their most optimistic. Thus companies can be either substantially under-valued or considerably over-valued. It is not a coincidence that merger and acquisition activity has intensified in recent years, and that the largest hostile takeover in the life insurance industry should have taken place at the end of an extraordinarily favourable decade for investment returns, which coincided with a period of very strong sales for the life assurance industry and also with two years when general insurance profitability was exceptionally strong.

Actuarial involvement inevitably requires a considerable amount of very subjective judgement on issues such as future investment returns; expense inflation; new business volumes and persistency. In practice, these judgements appear to be of primary importance, with the valuation technique being of less significance. Alternatively, the robustness of the valuation techniques may not be called into question, but the individuals concerned have to be robust, either to pursue a merger or acquisition to a successful conclusion or to walk away. If the decision proves to be incorrect, then they must be robust enough to face the criticism, and the adviser's professional indemnity insurance may possibly need to be robust enough to withstand the consequences of litigation.

A particular characteristic of U.K. life companies writing with-profits business is the high proportion of assets invested in equities. This raises important issues. Any method of valuation of such a life company must take this into consideration; and any subjective judgement of future investment returns should be based on a careful long-term assessment of equity and property investments. From one 10-year period to the next there have been major variations in investment returns. These have had significant implications for the profitability of long-term business, and, therefore, any valuation that involves a bland assumption as to future investment returns is of limited value.

The key issue in this paper is the extent to which the actuary's judgement is involved in the subjective aspects of valuation, and how heavily that judgement is relied upon by the buyer.

Mr D. G. R. Ferguson: The authors describe a high pressure, high exposure situation which is "far removed from the actuary's traditional comfort zone". Most actuaries encounter such situations only rarely during the course of their careers and many will never do so. When they arise, it is invariably with suddenness and a wrong move early on may compromise your position. This is when the experience of others is of most value.

Frequently, at least one party involved in a takeover or major transfer of shares will already have a close working relationship with the Appointed Actuary, and will find it natural to seek his advice as to the company's value. In general this should be resisted, and the use of independent actuarial advice should be encouraged at an early stage. An Appointed Actuary is accustomed to dealing professionally with any potential conflicts arising from being, additionally, some or all of policyholder, employee, director, preferential mortgagor, shareholder and stock option holder. However, the money involved in takeovers is substantial, the pressures are high, and the Appointed Actuary needs to keep out of the fray as far as possible, in order to preserve his credibility and his role as guardian of the interests of policyholders.

I was once the Appointed Actuary to a company when the majority shareholder decided to sell a controlling interest to a minority shareholder. Heads of Agreement were signed, based on the quoted share price, and it seemed reasonable, when asked informally, to comment reassuringly on the agreed price. Some time later the negotiations got sticky when the stock market price had fallen significantly and the majority shareholder then sought from me confirmation that the original price was justified. At this point the conflicts became only too apparent, in particular the pressure which I would be under in subsequent years to facilitate earnings adequate to justify the purchase price. My unwillingness to take sides and help the seller at this late stage in the negotiations caused problems with a man who was my current and future employer.

Some years later, I was able to turn this experience to advantage. I was then in the position of advising the minority shareholder in a company which had only two shareholders. The majority shareholder was wanting to buy out the minority shareholder, and was being advised by the Appointed Actuary. It was not difficult to influence the negotiations in a way which put the Appointed Actuary in a difficult compromised position, and this certainly helped my client to secure a very favourable deal.

Most European shareholders, analysts and many potential shareholders are not familiar with appraisal values. Profit testing is still a novelty; hidden wealth is often enormous and unquantified, and the treatment of capital gains, of policyholder expectations and of shareholder entitlements, is an imprecise science. In this situation, deals are struck for grand, far-sighted strategic reasons, and the price is frequently determined by someone starting the bidding with a multiple of perhaps once or maybe twice the premium income, with scant regard to whether that premium income is single, annual or indeed life or motor, and the bargaining is then concluded with all the style and panache of a Turkish bazaar. However, more and more companies are learning about our actuarial techniques as a result of their activities in the U.K. and the U.S.A. In the Netherlands, companies are now beginning to recognise the value of appraisal values in their own market and seek to educate analysts as well. In Portugal, the government is having regard to appraisal values in relation to forthcoming privatisations. As the restructuring of the European insurance industry continues, and the E.C. Insurance Accounts Directive leads to more disclosure, we can expect U.K. experience to be of increasing relevance.

Mr H. E. Clarke: Concerning the general business aspects of the paper, although in the particular case the general business was of relatively minor importance, this is not always so, and might well not be the case in a future takeover of a quoted U.K. insurer.

The distinction between existing business and future business is important, because in valuing the general business it is necessary to produce answers compatible with those produced on the life side, and, in particular, to split between the embedded value and goodwill. In Appendix 10 the three sources of value in the existing business are outlined. The first two clearly relate to business already on the books for which premiums have been received or are contractually due. However, the third item relates to renewals of existing policyholders. Whilst stating that they are easier to obtain than new business from new policyholders, the value of renewals is placed in goodwill, because insurance contracts in general insurance are typically for one year.

Upon renewal, a new contract will be taken out for which the premium will almost certainly be different, and the terms and conditions may also be different. Normally, the premium rates and terms and conditions will be the same as those applying to new policyholders. This is in obvious contrast to the position applying in life insurance, where in a normal long-term contract the premium rates and terms and conditions do not vary on renewal. Thus, the underwriting loss ratios and commission paid can be varied upon renewal in general business and will be the same as for new policyholders. This is why it is appropriate to include renewals in the calculation of goodwill and not in the valuation of existing business. However, it is easier to obtain renewals for existing policyholders than new business and this has implications for assessing the discount rates. The ease of obtaining renewal business depends on the class. For some classes, like buildings and contents, the market has so far seemed relatively immune to competition, with most people renewing automatically with the same company. This is particularly the case where the premium is included with the mortgage repayment. In other classes, like motor, up to 30% of policyholders switch companies on renewal.

I now turn to the compatibility of the life and general business assumptions. Whilst it is relatively easy to decide what compatible assumptions about levels of new business and investment conditions might be, the position relating to discount rates is less clear cut. First, consider the pre-issue discount rate. For the reasons I have just discussed on the ease of renewing existing business, I believe that it is easier to obtain new business (for the purposes of calculating goodwill) than it is in life business. Against this the profitability can be less certain. The relative importance of these two considerations will influence the relationship between the general and life pre-issue rates. Further, it might be appropriate to vary the rate by the line of business, depending on the percentage of business that normally renews. Turning to the post-issue discount rate, one's initial starting point might be to choose the same rate for life and general business. However, particularly for personal direct lines business, the main cash flows extend only a few years into the future. Against this, while the profit in the claims reserves is capable of reasonably accurate estimation, the profit in the unearned premium reserve can be significantly affected by natural disasters and changes in claim frequency that occur before the expiry of the premium. On balance, for a company with stable business I have generally taken as a starting point a post-issue rate that is equal to the life post-issue rate and a pre-issue rate that is half way between the life post- and pre-issue rates.

I now consider the cost of capital. In an appraisal valuation, it is important to allow properly for the cost of maintaining the large amounts of capital required to meet the market perception of a reasonable solvency margin for writing general business. Because the capital required is large, the result of allowing it to be locked in can be a substantial reduction in the value of goodwill. The higher the rate of new business growth, the lower the value of the capital locked in. In particular, if the rate of growth of new business equals the rate of return on the capital locked in, then it turns out to have no value whatsoever.

Turning to the need for appraised values in general insurance and the assumptions that should be published, Section 2.2 of Ryan & Larner's paper (*J.I.A.* **117**, 597) considers the various methods traditionally used to value a general business operation, for example, a multiplier or capitalisation factor applied to current or expected earnings. These methods are unsatisfactory, because there can be a long time before the profits relating to a particular year's written business are really known. Further, the strength of the reserving, and the effects of the underwriting cycle and catastrophes can all have an effect on a particular year's earnings. Thus, unless a proper appraisal analysis looking at future earnings streams on explicitly stated assumptions is carried out, it is difficult to arrive at a true value for a company. Furthermore, goodwill is often a much larger component of the appraised value than for life business, and its value is dependent on the various assumptions detailed in Appendix 10, e.g. future underwriting loss ratios. Thus, if an actuarial appraisal were to be published for general business, I feel that a reasonable amount of information about the assumptions would also need to be published to make it a useful figure. Items (i) to (iv) under the discussion of goodwill in Appendix 10 would be a reasonable starting point for choosing the assumptions to be published.

Mr J. R. Trowbridge: The traditions of the life industry and of the profession in Australia are very similar to those in the U.K., but an AMP/Pearl case is not really likely, because there are no listed life companies in Australia. The essence, however, is not a hostile takeover of a public company, it is the sale and purchase of equity in a life company. We had our own parallel in Australia this year with the announced merger of National Mutual and ANZ, which was ultimately aborted. It is incidental to the main discussion on AMP and Pearl that the purchaser was an Australian company.

On the matter of disclosure, in a rational market it is essential that the potential buyer can find out what he is buying. In a private sale, which is the most frequent case, the buyer usually has the opportunity for full due diligence. Therefore, although the principle of *caveat emptor* applies, there is usually greater access to information than for an open market purchase. There are possible exceptions, however, in competitive tendering or in any other situation where there is a sellers' market. In this situation, the bargaining power of the buyer is weak, and, therefore, disclosure in actuarial reports is valuable.

As an example of problems of non-disclosure, in the National Mutual/ANZ case, the purchasers were really the ANZ shareholders. Individually, their position was rather weak, and they were never given sufficient information to make informed judgements of the merits of their investment. Disclosure and professional responsibility of the actuary cannot be disentangled. So why was disclosure limited in the AMP/Pearl case—if indeed it was—and in the National Mutual case, why was it so inadequate? Is it what the authors refer to as the cloak of professional judgement, or what I may call the cloak of commercial sensitivity? Corporations will always disclose the minimum amount of information consistent with achieving their objectives. The logical conclusion is that regulators and professional bodies should make rules about disclosure. Whenever information is withheld, there is the suspicion that there are either undisclosed benefits conferred on somebody or undisclosed costs imposed on somebody. I support, therefore, the general contention of the authors that decision makers and advisers be given rights to make their own judgements and be given the means to do so. In principle, greater disclosure assists all parties and allows concentration on the real issues instead of on numbers and on the credibility of individual actuaries.

I am not in a position to comment on the disclosure in the particular case of Pearl; I am simply advocating that there should be greater disclosure than we have seen over the last 20 years. The professional responsibility of the actuary is very high. It is not possible for anybody but the actuary to estimate appraisal values or economic values of life companies; and it would be a tragedy if anything transpired to change this in the minds of regulators or owners or advisers from other professions. So what is the responsibility in a case like Pearl? Is a single figure enough, or a range of figures, or a single figure plus sensitivities? How far should the method, the assumptions, data, and results be disclosed? The responsibility is to accord with the letter and spirit of the Code of Conduct, and to respond to the interests and wishes of the client to the extent that is acceptable under the Code, and consistent with the intention of the Code that advice be prepared objectively and impartially.

In summary, one cannot divorce professional responsibility from disclosure. Generally, the profession has long believed in substantial disclosure, and the Code of Conduct is testimony to this, but the cloak of commercial sensitivity often either allows or fosters an apparent cloak of professional judgement.

On the principles of valuation, notwithstanding technical debates and inherent uncertainty, appraisals are the best approach there is. We must, however, never forget the difference between appraisal value and market value.

Mr J. R. C. Elmslie: This paper is written by the bidders and is very much from their point of view. At times, for example in § 8.4 and Appendix 9, it seems to suggest that the target owes the bidder a duty of complete disclosure. Apart from the reasonable expectations of the policyholders, the duty of the board of the target company is, of course, to their own shareholders. Not only do they have a duty not to recommend an inadequate bid, they have a duty not to recommend an adequate bid, provided they believe that they can get a better one.

In § 1.6, the authors discuss whether the actuaries of both bidder and target should disclose to the public the bases on which they have determined the value which they place on the company. The two are in quite different positions. The defending actuary is effectively drafting a public document which advises shareholders whether to accept the offer or not, and he puts his signature to that document. The shareholders are entitled to know in outline how he has done his calculations, even if they do not understand the explanation. Beyond this, I do not think that too much detail should be given. Shareholders are not invariably advised by an actuary, and they would understand the basis even less than the press. The more detail that is given, the less is the understanding, and the detail is, therefore, of doubtful help. The partial basis in the Pearl defence document was only attacked by AMP in very general terms as being distinctly optimistic. I suspect that the attack was so general partly because the assumptions do not strike me as distinctly optimistic.

On the other hand, the bidder's actuary is making a private valuation to advise the management of the bidder, and he will do it before the bid is made. If they request him to value the company on a range of bare assumptions on various growth bases, there is no reason why he should not do so. They can then use the basis that they prefer, and that is their basis and not the actuary's. Of course, it is arguable that the bidder should inform his owners of the basis on which he has arrived at the offered price, so that they can persuade him that they consider it to be too optimistic. It may well be an advantage to the bidder if his owners are Australian policyholders rather than British institutional investors. In this particular case, it is not only the policyholders of the target company that have, in practice, no franchise. I should be interested to know to what extent this was considered by the regulatory authorities in Australia as well as in the U.K.

Mr Duval has already dealt with the effect on the AMP. Although the effect is not clear from the DTI returns, the Australian policyholders must, I suppose, be the eventual owners. The owners are affected by the investment of a sum which is something like 10% of their total funds in a foreign currency in a single investment on a 2% historic yield, and financed, if I understand Appendix 4 correctly, by borrowing at a high rate of interest. To justify the price paid, I would have thought that AMP must have placed on Pearl a higher valuation than Pearl placed on itself. For example, apart from the excess assets, Pearl has not placed any value on the general business. AMP has given considerable thought to valuing it, and presumably arrived at a positive value. However, the main difference between the two must lie in what Tillinghast called the 'existing structure value' of the life business. This valuation is particularly sensitive to future growth assumptions and, to justify the price paid, AMP must hope to achieve a high growth rate.

Estimates of the value of future business depend not only on growth rates, but also on future trends of expenses and lapses, which will themselves be affected by changes in growth rate. Any such estimate is essentially an estimate and cannot produce a real value for a company. The value of any investment is debatable. To the man in the street it is the quoted price at which he could sell it or buy it. To the investment actuary, it is the present value of the expected flow of interest. To the takeover bidder it may be the break-up value of the constituent parts of the target. However, an insurance company has, in general, no break-up value. An insurance company, like any other company, has a goodwill value resulting from the existence of an administrative system and staff, a sales force and a body of satisfied customers. The Pearl has a particularly stable distribution system and rate of expansion, but, nevertheless, I do not think it is feasible to place a precise value on that goodwill, and any attempt to do so by assuming rates of expansion is as likely to prove misleading as helpful to the investor.

Mr C. S. S. Lyon: As the opener has pointed out, one issue not directly addressed in the paper is the position of with-profits policyholders. Like the shareholders of a public company, they are an ever-changing constituency. As a constituency they are normally entitled, under the company's articles, to a defined share of the distributed profits of the long-term business, which means that they have an equity interest in it. New with-profits policyholders with regular premiums usually utilise capital from the fund in the early years of their existence to finance acquisition costs and prudent reserves, but after this has been returned, they contribute development capital to the fund until such time as they terminate, at which point the policyholders' equity is crystallised in the form of terminal bonus.

In a mutual office, this negative-positive-negative cycle of capital transactions between the fund and its with-profits policies must produce an internal rate of return to the fund sufficient, in the long run, to finance the growth of the business. In practice, the same applies to a proprietary office, with the proviso that the fund must also meet the cost of transfers to shareholders. It is very unusual for the shareholders of a proprietary office to inject fresh capital into a with-profits fund; the development capital comes from the with-profits policyholders just as it does in a mutual office. Given that situation, is it reasonable that the with-profits policyholders of a proprietary office have no voice in a takeover? An obvious reason why they do not is that the provisions of Section 49 of the Insurance Companies Act do not apply. Yet that Section requires the sanction of the High Court for even the most straightforward transfer of business from one long-term fund to another, and the Court cannot give its sanction without a report by an independent actuary on the effect of the transfer on the policyholders concerned.

With the development of professional guidance on the responsibility of an Appointed Actuary to advise his company's directors on matters pertaining to the reasonable expectations of policyholders, the independent actuary in a Section 49 transfer can, perhaps, be content with a scheme of transfer which includes a requirement for the directors of the transferee company to have regard to the advice of their Appointed Actuary in safeguarding the reasonable expectations of transferring policyholders. If the directors do not heed his advice the scheme may recognise that he then has a duty to alert the supervisory authorities.

The timetable prescribed for a contested takeover makes it impractical to extend Section 49 to cover such a situation, and, in any case, the policyholders' funds remain intact—at least, for the time being. An alternative may be for the Appointed Actuary of any company to be given a specific professional responsibility to alert the supervisory authorities if, as a result of a takeover or otherwise, the directors of the company, against his advice, and without giving reasons which satisfy him, conduct the business in a manner which he considers prejudicial to the reasonable expectations of policyholders. That would, of course, require an addition to our guidance.

I was horrified by the reference to possible changes in profit-sharing articles—changes which would clearly affect policyholders' equity interests—as being capable of being made without much more than a nod from the DTI. Surely people's equity interests are being changed; the principles of Section 49 should then apply, with the Court needing to be satisfied by an independent actuary's report. An increase in the shareholders' maximum proportion of the surplus is very similar to a position in which a company is demutualising into a proprietary company, 10% of future surplus going to the new shareholders. One would, therefore, expect a price to be paid by the shareholders for increasing their maximum proportion, unless it is the fair result of an injection of fresh capital. So I think that we also need to address the position of policyholders, in the event of a change in the proportion of profits that go to shareholders.

Mr J. Goford: As called for by others, it is also my belief that the issues raised by this takeover would be most suitably dealt with first by a working party before being aired in this Hall. The reasons are several. There is much confidential information relevant to the debate which cannot be aired here, but which needs to be heard to obtain a balanced view. A working party can hear accounts from each side rather than just from one side speculating about the activities of, and pressures on, the other; it can listen better to the concerns and needs of the merchant bankers, lawyers, and Takeover Panel in such an acquisition; it can separate the commercial considerations of the principals from their professional interests, and it can also separate the commercial considerations of the consulting firms from their professional interests.

Disclosure of the factors used when making an actuarial judgement is necessarily limited by the nature of the letter or report. We may ask what details are sufficient to be made known of the factors used when making an actuarial judgement. Is just disclosing the assumptions sufficient? Are assumptions and sensitivity tests sufficient? Maybe there should be a demonstration that there is consistency between the relative changes and assumptions used to demonstrate the sensitivity. In other words, how is a reader to know whether a 10% change in the mortality assumption consistently reflects the same risk as a 10% change in the lapse rate? Also, at what level should the sensitivity test be shown? Should they all be slight, or all medium changes or all heavy changes?

Obviously, previous experience has been drawn upon in arriving at the assumptions used. Presumably the raw investigations into the experience of the company have not been used directly as assumptions. So how was the judgement made to use the assumptions, and how were they derived from the raw data? What previous industry experience was used by the actuary, and how was it obtained?

It is a moot point as to which way round is most likely to avoid unnecessary criticism of, and challenge to, the actuary. It is difficult to know if the actuary lays himself more open to criticism if he states the key assumptions with an informative, open commentary, and sufficient sensitivity illustrations to highlight the care which must be taken in using the numbers, or is he more exposed to criticism if the statement of all the assumptions and a host of sensitivity tests gives the impression that these are all the factors which have been taken into account in making the actuarial judgement, and hence gives the impression of authority by appearing to be just a mechanical exercise?

Turning to the issue of the interests of the policyholders of the acquiring company, one of the issues which the working party may care to consider is the extent to which the normal rules for spreading investments may be broken when a company is acquiring a business which is the same as its own business. In other words, when a life assurance company is acquiring another, is the size of the business irrelevant because it just becomes one bigger insurance company? Does it matter if the acquired company includes businesses with which the management of the acquiring company are not familiar? Does it matter whether the price paid is commensurate with the nature of the risk and the size of the purchase?

I am puzzled by the references to the policyholders' reasonable expectations of the acquiring company in §§ 5.5 and 5.7. Both references mention the DTI. Neither mention the Appointed Actuary of AMP. Is it sufficient to demonstrate that the reasonable expectations of the policyholders of the acquiring company are not affected by making only short-term projections of solvency, showing the effect of changes in investment conditions? Are not the reasonable expectations of the acquiring company's policyholders of a longer-term nature than short-term solvency?

On the subject of separation of professional and commercial values, I am interested in how the apparent conflict for the advisers is resolved between, on the one hand, using embedded values and appraisal values in prospectuses, and, indeed, in this acquisition, and, on the other hand, endorsing statements about the irrelevance of these values such as we see in the appendices, especially when the AMP Appointed Actuary will continue to use embedded values to determine AMP policyholders' reasonable expectations. I am also interested in whether Mr Salmon felt inhibited by his membership of this Institute whilst wearing his hat as principal of the acquiring company. Were there some actions he felt he could have taken to produce a lower price than 690p, but which he declined to do because of his FIA? To broaden the question for an issue to be considered by the working party: are there circumstances in which membership of the Institute is irrelevant to a function and could work against the duty of that function, for example to obtain the best or lowest price in an acquisition? If so, what is the remedy?

On the subject of negative goodwill, I was interested in the remarks made by an earlier speaker who said he had a problem when goodwill came out negative. Presumably his multiple was positive, so it meant that the new business was unprofitable. I was interested in the fact that he would then look for a way of valuing the distribution system, presumably to arrive at a positive value, which had demonstrated that it could sell only unprofitable business.

Mr R. D. Corley (closing the discussion): When a new history of the actuarial profession comes to be written, it is likely that a dominant theme of the 1980s will be seen, in retrospect, to be the accelerating pressures on actuaries holding positions of responsibility. These pressures have many roots—increasing competition, the effects of the Financial Services Act and of the move towards a Single European Market, and the information explosion are the first four to come to mind—and there is unlikely to be less pressure in the 1990s. As a result, the Councils of the Institute and Faculty have been formulating guidance to help our members withstand the forces bearing down on them. Into this scene there dropped the largest contested takeover in the U.K. of a life office, and a whole new range of pressures were seen. There are several areas where the case for further guidance needs to be considered. My objective is to identify the next steps for the profession; and these are most easily considered under a series of headings.

Terminology. The opener explained his own difficulty with 'existing structure value', and I think many of us would understand why there is a problem in interpreting this term without further description. Ideally, we would like a glossary, but one which uses names which are more likely to give rise to correct guesses than incorrect ones.

Methodology. When it comes to putting a figure on this 'existing structure value', or 'value of future new business', the paper describes how the different approaches of the two sides brought out two very different answers, with one assessing it at about 40% of the total valuation whilst the other suggested that, as mere goodwill, it has very little real value. One can only speculate on what the values would have been if the two advising actuaries had swapped roles.

Our profession has always defended the right of actuaries to take different approaches, to make different assumptions and to bring out different answers, and clearly some freedom of judgement must continue. The question which arises is whether, in such a sensitive area, the range of these differences should in any way be curtailed. The problem is not an easy one, even in theory, because, once an acceptable range is defined, the temptation in a contest such as the one we have been examining must be for the advisers to the two contestants to sit at the opposite ends of acceptability, and feel that they are then doing their best for both their principals and the profession. If the defined range is broad, the differing answers will still not achieve public credibility. If it is narrow, the room for the actuary properly to use his experience and judgement will disappear.

There is room for substantial debate on the methodology for obtaining appraisal values, but the debate needs to be brought to a palatable conclusion and eventual guidance. A part of the necessary groundwork has been covered by the Embedded Values Working Party, but there is still much to be done. The test of any solution to this particular problem will remain, whether the value brought out is one that is considered valid and used in a free marketplace.

Disclosure. Another of the subjects which has aroused interest is the disclosure of assumptions and data, and, in the present context, this means disclosure by the target company. In general terms, greater openness expresses the mood of our world today, and it is very difficult to mount a convincing argument against disclosure. Indeed, I have yet to hear any dissent from the view I put forward two years ago that disclosure of his assumptions enhances, rather than detracts from, the stature of an actuary, and also helps to protect his position if a disagreement arises at a later date.

To expect a target life company to disclose more data and assumptions than are normally disclosed by competitors raises other issues, for the directors will be wishing, and probably expecting, that the bid will fail and that the enterprise will be able to revert to normal business. They may, therefore, be concerned about any disclosure which could possibly be used at a later date to put them at a commercial disadvantage.

The profession can perhaps best support the principle of greater disclosure by life offices generally, despite the additional work entailed, and look for more information about the assumptions and bases adopted in calculating values and profits. It could also be helpful to have a split of profit according to source, with categories such as new business, existing business, returns on other assets and changes to assumptions.

Profit. The consultative document from the ABI on this subject should eventually lead to greater consensus on what is to be measured. It is probably true that the board of directors of any traditional life office, whether it be proprietary, mutual or the subsidiary of a different type of company, would like to have a better idea of the run of year-on-year profits, but it is still legitimate to ask for what purpose a profit estimate is required before settling the bases for the calculation. The aim for the annual accounts must be to have a profit statement which is not only a true and fair view, but is also meaningful to as many of the legitimate users as possible, and the Institute is intent on helping to achieve that end. Nevertheless, however this matter is resolved, the wisest counsel is likely to be to remember the old saying that you cannot judge a life office by a single figure.

Undervaluation. The paper makes some play with the problems that may arise if the target company and its advisers overstate the profitability or the appraisal value of the company. There is another side to this, because, if the advisers to the target company seek to protect themselves from possible later litigation by shooting low, and understate the profitability or the value, and the takeover then goes through on the basis of this low valuation, it is possible, though admittedly unlikely, that later they could face being sued by a shareholder who sold. The most we can say is that this adds to the case for deciding on an accepted method of calculating values and profits.

Policyholders. It has been noted in the paper that the policyholders of the target company had no voice. A hard line on this would be to say that they chose to have no voice by taking out policies with a proprietary office rather than a mutual one. However, some thought must be given to the position of such policyholders, particularly if the proportion of profits payable to the shareholders is not fixed, or is not already at its maximum. After a takeover there must be a temptation to press the actuary to increase the payout ratio to the new shareholder at the fastest rate the Regulations will allow; and, without the benefit of some form of guidance, it might be difficult for him to judge whether this is a reasonable request.

What was not noted in the paper, but has been commented on in the discussion, is that the policyholders of the bidder also had no voice, even though it was a mutual. Obviously the actuary of the bidder has to satisfy the DTI, and probably others, that his policyholders' expectations were not being seriously eroded, but, if it had been a merger, even with a minuscule office, the policyholders themselves would have had to be asked. The whole question of policyholders' interests, and the Appointed Actuaries' duties should also be on our list for consideration.

Pressures. We are seeing new and huge pressures on actuaries who are involved with companies which are on one side or the other of takeover battles. In this situation, every actuary must have the ability to differentiate between commercial judgement and professional judgement, and must be big enough to prevent the commercial interests of the organisation he serves overriding his own sense of what is professionally acceptable.

The actuaries of bidder and target companies are not so fortunate as consultants, for they may find themselves under pressure from actions taken by their own or someone else's board of directors. Perhaps actuaries in potential target companies are even now worrying about future battles. It is for them, as well as for good order in the market, that the Institute and Faculty must review the whole scene and determine what advice is necessary.

Independence. The talk of pressure leads us on to the question of independence of the consultants advising each side. In a merger, each office would appoint an actuarial adviser, and a third and independent adviser would be appointed to see fair play. In a contested takeover, the two sets of advisers are in up to the neck, and no mediator can intervene. Naturally, both sets of advisers wish to see their clients win, and their own commercial interests are served best by being seen to be advisers to winners. So what does independence of the consultants mean? Clearly, it does not mean doing less than the best possible job for the principal who has appointed them. What it must mean is being prepared to resign if the principal's commercial ambitions cannot be satisfied without setting aside the consultants' own understanding of what is within professional bounds. This profession is proud of the way it has been able to maintain this form of professional independence over the last 150 years, and will not give it up now.

What comes next? In the final count, the list for Council to consider becomes constructing a common language; talking as necessary to the DTI, the Takeover Panel and the Stock Exchange; organising some learning opportunities for senior actuaries, perhaps as a part of continuing professional education; and, of course, formulating and issuing appropriate guidance. I will not commit our colleagues now to a particular method of tackling this work, but I will make a commitment that all the points raised so well in the discussion will be given proper consideration.

In contested takeovers we have a new, fast-moving and very commercial scenario, which has the potential to become highly charged and even acrimonious. The Institute, together with the Faculty, recognise that we will have to work quickly and wisely if we are to be sure to produce proper guidance and support before there is another chance of it being needed by some of our members.

The President (Mr H. H. Scurfield): I make no apologies for having broken with tradition again this evening in having a live case study. It has given an opportunity for a very useful debate, although its real value, as Mr Corley has just said, depends now upon the work which we get down to and do. I am rather relieved to have delegated the chair of the LAJC, because I fear that there is yet more work to fall on that committee as we face up to all the issues.

It is a very timely debate, and not just because there are going to be more takeovers. This week the profession is responding to the ABI on its proposed SORP, and we are looking at values and profits. There are things in common between these two. Actuarially we have tried to put a value on companies at a time of takeover, at a time when it is very much in the public eye, and we are surprised that the lay, the non-actuarial, do not understand us.

Perhaps, as a matter of routine, we should have some regular disclosure which uses some of the issues which become necessary at the time of a takeover such as this. I am sure that we need more disclosure as a matter of course—and that, indeed, is one of the things that the profession will be saying to the ABI. It needs to be better, and it needs to be regular, so that the real value is understood by more people and not just actuaries. Such disclosure could become a discipline for directors and managers. It should also demonstrate an ability to pay, and to continue to pay, good value to policyholders, their advisers, and prospective policyholders.

I want to make just one further point referring to §13.2, which talks about actuaries and stockbrokers perhaps producing different values. I thought of that this morning when we had a meeting with accountants. When we shared our understanding with the accountants we found that we were very close, because we took the trouble to establish the ground rules. That need for inter-disciplinary discussion is greater now than it has ever been.

We should all be very grateful to the two authors for taking the trouble to put this case study down. They could have been excused for thinking once the deal was over that they could then get on with their consulting and managing roles. Some measure of that gratitude lies in the number of people who have attended tonight, and indeed taken part in the discussion.

May I now ask you to show in your usual way your thanks to the two authors.

Mr I. L. Salmon (replying): This paper was conceived out of the position that two actuaries on the bidder side found themselves placed in. My co-author was giving the actuarial advice and I was trying to act as the principal and not to be unduly influenced as an actuary. I found it to be extremely difficult to be distant, and the many questions that resulted led us to think that the issues we found would be of interest and value to the actuarial profession at large. The response to the paper is all that we could ask for. In signalling some of the issues which we see today and which lie ahead, we did not seek to put forward a final word. We sought to portray a particular case in the hope that the extensive disclosure of both the commercial and actuarial aspects would stimulate discussion across the breadth of the profession and bring greater breadth of experience to the issues we found in our takeover operation.

The interests of policyholders of both organisations were paramount. That meant very extensive discussion with the DTI in respect of the policyholders of both the AMP and the Pearl. When we were set to go, and the DTI finally gave us a clearance, I remember saying to them, "you have put us through the most extensive tests, we have jumped through hoop after hoop after hoop". The response was, "Yes, but you didn't touch the sides, did you?" The extent of care involved was such that it took us over two years, but at the end we had done everything possible to look after all policyholders' interests.

In case anyone should think the reference to litigation was overdone, I can refer to an Australian situation which is currently developing. The situation is that of two companies which have got into deep financial trouble as a result of an attempted 'scam' involving the sale of the companies and some poor investments. A great deal of money is involved and numerous law suits are in train. Although no actuary yet appears to be directly involved it is possible that at some stage one or more could be.

WRITTEN CONTRIBUTIONS

Mr C. E. Barton: It was pleasing that much of the discussion was concerned with the position of the with-profits policyholders, to which vital matter the paper made very little reference; in particular, it did not state specifically that the Pearl is to continue as a proprietary office with a proportion, currently 10%, of the surplus of the main with-profits business being allocated to the proprietors, i.e. the with-profits policyholders of AMP.

I find the situation of a proprietary with-profits company being owned by a mutual very questionable, since it breaches the commitment of the policyholders of the parent company to the fundamental principle of mutuality. I see nothing wrong with a proprietary company being taken over by a mutual; indeed, other things being equal, this is to be applauded, but only if it involves the mutualisation of the proprietary company, so that it leaves at least all *new* with-profits policyholders on an equal footing, whether they sign up with the erstwhile proprietary or the original mutual.

There seemed to be differences in the understanding of various speakers as to the scope for changing the shareholders' proportion and as to what the attitude of the DTI is, or what it should be. I very much agree with the concern expressed by several speakers, in particular Messrs Duval and Lyon, and support their suggestion that the Institute and Faculty should direct their attention to this most important matter. I suggest that this proposed study should be concerned not only with takeovers and mergers of companies transacting traditional with-profits business, but also with the position of the policyholders within all such proprietary companies, whether or not they are involved in a takeover or merger. Consideration should be given, not only to the propriety of direct changes in the shareholders' proportion, but also to effective changes which come about indirectly.

In 'The Flock and The Sheep' (*J.I.A.* **108**, 361), Redington drew attention to the fact that, due to the considerable increase over the last 40 years in the proportion of with-profits premiums represented by the in-built bonus loading, the formula of 10% to shareholders has meant that their share has increased from something like 1% to something like 4% of the premium. There is also the point that the artificially low rate of interest used in published net premium method valuation bases means that, realistically, the shareholders' share in respect of reversionary (but not terminal) bonus can be significantly higher than it is purported to be. The preceding two sentences relate to traditional individual with-profits assurances, but the adaptation of the shareholders' 10% to the relatively new classes of pension (individual and group) and unitised with-profits business also leaves much to be desired and merits critical examination.

The treatment of taxation can represent a significant advantage to shareholders, the extent of which has varied according to the different taxation bases which have applied from time to time.

Another aspect which has emerged in recent years is the possibility of the shareholders' share being effectively increased by the restructuring of a company (the purpose of which may be justified for other reasons) which involves, for example, the investment and/or information technology departments becoming shareholder-owned service companies.

Paragraph 8.1.2 states that "The estate can be considered as potentially available both to enhance the bonuses for existing with-profits policyholders, and/or to enhance bonuses for the future with-profits policyholders and as a buffer margin. . . ." The construction of this sentence with its 'and/or' and 'and' leaves me in some doubt as to the authors' precise meaning, but the point I wish to make is that the estate may, and should, be used to finance new business and facilitate more successful investment and *also* to provide bonuses to outgoing policyholders; these are not alternatives. All that is needed is for sufficient of the benefits paid to outgoing policyholders to be in the form of terminal bonus, i.e. not guaranteed in advance. You can have as big a buffer as you like and still provide full value for money. This does, of course, have consequences not the least of which is that pay-outs will go down as well as up.

Mr P. S. Carroll: What I most welcome in this paper is the implication that actuaries could do better as regards communication and education so as to be better seen to consider the interests of policyholders in a merger or takeover.

I was involved as a policyholder and voting member of the smaller of the two mutual offices whose merger was mentioned in § 5.6. At the time many policyholders were unhappy and some were very angry. I feel sure their fears were compounded by ignorance, and I like to think that this paper has been written so that future mergers can avoid some of the pitfalls revealed then. There was then an independent actuary's report, but this was no more useful to the London Life policyholders than the other actuaries' reports. I wish that mutual offices were better constituted to enable policyholders to have informed participation in major decisions like this. I would like to ask the first author if he has considered what I understand that Japanese mutual life offices have in the way of regional meetings and policyholder representatives other than directors. Mutual offices can offer their policyholders more democratic participation. It would have been far preferable if the independent actuary's report in London Life's merger had been prepared in consultation with policyholders' representatives. As it is now the constitutional position remains unsatisfactory.

As Mr Twyman has pointed out, an acquisition by merger is treated like the purchase of a block of business. The implication seems to be that a disposal by demerger is like the sale of a block of business. What franchise have the policyholders in a block of business that is sold? For London Life policyholders, now in the AMP group, this is no academic question. As Mr Corley has observed, a policyholder in a proprietary office can be said to have chosen not to have a voice. If our mutuals were better constituted, so that their policyholders were seen to have a worthwhile voice, perhaps the proprietary offices would do something for their policyholders as a competitive response. Is it possible for the Institute to address this question, so as to make recommendations for actuaries advising mutual companies? If we do not have a satisfactory constitution for international offices both mutual and proprietary, operating in several E.C. member states, then soon the whole industry and the actuarial profession will suffer.

Mr A. J. Sanders: Documents, which give embedded or appraisal value information in connection with the sale of shares of quoted insurance companies, are just the tip of quite a large iceberg of embedded and appraisal value reports produced by consulting actuaries for a wide range of purposes, including potential sales, financial reporting, management control and share incentive schemes. Many of the issues discussed in the paper arise in a range of different forms, depending upon the purpose of the exercise and for whom the actuary is acting. In making an assessment of the embedded or appraisal value of an insurance operation there is, inevitably, a range of assumptions which can be made and which can be considered as reasonable in the circumstances, and, in consequence, a range of reasonable possible values.

When an insurance company is offered for sale, a report is sometimes provided by consulting actuaries to the shareholders of that company for the purpose, initially, of allowing the shareholders to form a view as to the value of their company. The report may subsequently be shown to potential purchasers, but will almost certainly carry very strong disclaimers to the effect that it should not be relied upon by third parties. In these circumstances, the actuary's principal has a clear requirement to obtain the highest price for his company, and the actuary must act on behalf of his principal whilst maintaining his professional standards. The situation experienced by the actuaries who carried out the appraisal value of Pearl for the purposes of the defence document is similar in this respect. As the authors say in § 12.3, this situation is understood by the parties most closely involved with a possible transaction, but it is not always so apparent to other parties. In these circumstances, the degree of disclosure of assumptions and the effect of variations in the assumptions is, to some degree, dependent upon the principal's attitude and requirements. The list of 'ideal' requirements from the bidder's point of view, in Appendix 9, would represent a very open form of disclosure which may be desirable in a takeover of a public company, but is perhaps not as appropriate in other circumstances, for example a privately owned company. The degree of disclosure needs to be addressed by the profession, taking into account the wide variety of circumstances.

In an appraisal value, there will be uncertainty surrounding the valuation of the shareholders' interest in the estate of free assets, where the shareholders' current proportion of profits differs from that which is allowable under the Articles of Association. In Pearl's case, for Ordinary Branch business a minimum of 80% of the distributable surplus has to be distributed to with-profits policyholders, and currently about 90% is given. The value of the shareholders' interest in the estate is even more uncertain when the basis for division of profits between policyholders and shareholders is not laid down in the Articles. There are several companies of this type, and the situation can give, and has given, rise to significant differences in assessment between buyer and seller. In this context, it is necessary to take into account shareholders' future intentions, policyholders' reasonable expectations and how the DTI might view the situation. One must also bear in mind, when quantifying the shareholders' interest in the estate, that the remaining part of the estate attributable to policyholders may also carry with it other value for shareholders that is not explicitly being taken into account. One example would be that the free assets can be used to cover solvency margin requirements for new business or for a portfolio transferred into the company. The £1.3 billion bid for Pearl resulted in the control of free assets of nearly £4 billion at 31 December 1989.

In § 12.2 the authors express their surprise at the application by some sections of the press of a price/earnings multiplier to embedded value earnings to derive a benchmark for a suitable valuation. Embedded value earnings are made up of a number of elements, including value added by new business, interest added at the discount rate to the opening embedded value, the difference between experience and assumptions and the effect of any change in the assumptions. To apply the same multiplier to all these is clearly unsound. The value added by new business is perhaps suitable for a P/E multiplier, but the same multiplier is unlikely to be appropriate for the other parts, for example the part relating to interest added by the discount rate, which is attributable to the existing portfolio of business and is likely to decrease in the future, perhaps very rapidly if the future profits emerge quickly.

In § 8.1.4 the authors refer to two approaches for calculating the goodwill element in the appraisal value. The first approach calculates the value to shareholders of future new business at assumed levels, and the second applies a multiplier to base profitability of one year's new business. The first approach has the presentational advantage that it derives a value from explicit assumptions of new business growth and profitability. In the second approach the multiplier implicitly allows for new business growth, future profitability, security of distribution channel and shareholders' required rate of return. There is a danger that the simplicity of the multiplier approach can bring it into disrepute particularly if used by unskilled hands. Nonetheless, in most circumstances, the first approach adds little, in my view, to the quantification of value that cannot be equally or more easily achieved by the use of a multiplier, particularly bearing in mind the nature of the goodwill element. However, the first approach may, perhaps, be comprehended more readily by those to whom the values are reported, as it attributes value to an actual projected business development.

Mr P. J. Turvey: I am particularly concerned by the suggestion that potential purchasers of life assurance companies should rely on a database of recent transactions, as suggested by Mr Smart. There are certain serious flaws in this suggestion:

(1) The number of relevant transactions is very small, and no single actuary, or firm of actuaries, has a database which covers all relevant transactions (including failures to agree on a price).
(2) Recent experience suggests that a number of transactions have taken place at a price which the purchaser has subsequently regretted. There is no merit in being consistent with a series of prices which are, themselves, inherently inappropriate.

The authors subsequently wrote: The recent Caparo and Morgan Crucible cases are pertinent to the question of the legal liability of the reporting actuary. These are two recent and significant decisions dealing with the important issue of whether the directors and financial advisers of the target company in a contested takeover bid owe a duty of care to the bidder.

Caparo concerned a claim against a company's auditors in respect of losses suffered on market purchases of shares and on a subsequent bid for the company made in reliance upon the company's (allegedly defective) audited accounts. In February 1990, the House of Lords decided that auditors, in certifying a company's accounts for the purposes of the Companies Act 1985, owed no duty of care to a purchaser of shares in those circumstances. The court focused upon the purpose for which the information relied upon had been prepared and, in effect, took the view that it was not appropriate for a liability to arise when the information is relied on for a purpose different from the statutory purpose for which it was prepared. An equivalent analysis might well apply to the report of an Appointed Actuary in a life office's report and accounts.

From Caparo it is clear that it is now dangerous to assume that reliance can be placed on a document, particularly audited accounts, prepared by someone with regard to a specific transaction or for a particular purpose in connection with any other transaction or for any other purpose, without an express acknowledgement from the person who prepared the document that reliance may be placed on it for other purposes. In addition, even where a document has been prepared in connection with a particular transaction, the person preparing it may only be potentially liable in negligence to the person who actually commissioned it or the person to whom it is addressed.

The Morgan Crucible case is still pending a final decision. To summarise the position so far, Morgan Crucible, the take-over bidder, issued a writ in May 1987 claiming negligence against the directors, advisers and accountants of the target company, alleging that financial representations made by the company to its shareholders during the take-over battle (specifically a profit forecast) were negligent and misleading. Morgan Crucible consequently suffered a loss of over £50 million.

As a result of the Caparo decision in February 1990, Morgan Crucible applied to amend its pleadings to restrict its claim to statements made after the bid when Morgan Crucible was identified as the bidder, alleging that the purpose of the documents was to persuade the offerer in the position of Morgan Crucible to offer the best terms to the shareholders. The amendement to pleadings was subject to Court arguments, but was eventually accepted by the Court of Appeal. The hearing on the substantive issues of Morgan Crucible is due to start in January 1991. To date, all the Court of Appeal in Morgan Crucible has established is that an *arguable* case in negligence exists against each of the defendants. It has not said whether or not a duty of care is owed and has been breached. This has yet to be decided.

A number of speakers referred to the position of the with-profits policyholders of a proprietary office involved in a takeover. Mr Lyon, in particular, contrasted their position with that of policyholders involved in a transfer of business under Section 49. While we have much sympathy with the views expressed by Mr Lyon, there are clear differences between the Section 49 situation and Section 61. The latter does not involve moving policyholders from one fund to another. Also, it would clearly be impractical to try to extend the Section 49 provisions to the change of control situation. We feel that with Section 61 the reasonable expectations of the relevant policyholders have to be protected by the Appointed Actuaries concerned as well as by the supervisory authorities. The suggestion by Mr Lyon, requiring an addition to the guidance notes, that the Appointed Actuary be given a specific professional responsibility to alert the authorities if he considers that the business is being conducted in a manner prejudicial to the reasonable expectations of policyholders, is an interesting suggestion, but one which, in our view, could impose too heavy a burden on the Appointed Actuary.

A number of speakers (particularly Mr Dumbreck) referred to the Articles of Association of the target company, which permit up to 20% of the distributed surplus to be allocated to shareholders, whereas the current position is that 10% is allocated to shareholders. A number of speakers were concerned that the new owners could increase the shareholders' proportion from 10% to 20%. Such a change would, of course, be subject to the requirements of the Insurance Companies Act 1982, which provides protection against sudden or unannounced changes and which serves *inter alia* to alert the Department of Trade and Industry to the need to consider the implications for the reasonable expectations of the policyholders. In the AMP/Pearl case, however, this was never an issue. At the outset, AMP volunteered that if it succeeded in obtaining control of Pearl it would not amend the 90/10 ratio without first consulting the DTI.

A number of speakers (particularly Mr Duval and Mr Goford) raised the question of the benefits and expectations to AMP's policyholders. The DTI is involved in the supervision of AMP and, therefore, was concerned and involved in this matter. Much time was spent satisfying the DTI as to the implications for the reasonable expectations of the AMP policyholders. Also, the Appointed Actuary of AMP was heavily involved. Not only did the proposed investment have to seem appropriate as a longer-term investment, but also the short-term effect on the accounts and bonus prospects was fully investigated.

We would particularly endorse the points raised by Mr Turvey. We too found the reference to 'premium for control' to be an unhelpful concept, and we also prefer the prospective yield approach favoured by Mr Turvey. Likewise, we agree with his cautionary comments on the use of multipliers based upon market norms to evaluate goodwill.

Mr Keeler raised the issue of the Form 9 ratio and the references to financial strength in the AMP circular to Pearl shareholders. We share his concern about the misleading use of this ratio; particularly in the context of recommending companies' products or comparing one company's strength with another, but, used consistently for a particular company over a period of years, the ratio will provide a valuable pointer to the trend in the company's financial position.

Mr Arnold's comments regarding the purpose of the appraisal valuation are extremely important, and we agree with him that there is a danger that the actuary can get too enmeshed in the methodology and basis without considering carefully the purpose for which the appraisal value is to be carried out. Loose talk in this area is also dangerous, and actuaries that loosely refer to appraisal values as 'market values' need to reconsider what they are saying. Mr Arnold also referred to Section 10, and made the point that we gain little and could lose much by always claiming that we are different or somehow special. There was no suggestion in Section 10 that we are different or somehow special and, indeed, we are not against profit forecasts *per se*. All we tried to do was to point out that a profit forecast must be compiled with scrupulous care and objectivity by the directors whose sole responsibility it is, and we flagged the possibility that profit testing, or the use of forecast new business in an appraisal calculation or, indeed, the publication of an appraisal valuation itself, might be deemed to constitute a profit forecast.

We found the comments of the two Appointed Actuaries concerned (Mr Gordon and Mr Twyman) to be extremely interesting. We note that Mr Twyman mentioned specifically the valuation of AMP policyholders' investments in Pearl needing special treatment, so that policyholders are treated equitably. This raises the question in general of how such an investment should be treated in a bonus reserve valuation or similar exercise. Our view is that it is, possibly, helpful to consider the investment as comprising an income stream (or alternative income streams).

Commenting on Mr Goford's suggestion that there is apparent conflict between using embedded values and appraisal values in prospectuses, and, indeed, in the determination of policyholders' reasonable expectations, with statements regarding the irrelevance of these values, our view on the subject of recognition and use of embedded and appraisal values is as follows. These values are a recognised tool used by actuaries for a number of different purposes. They are a tool, but not yet a yardstick. There is not complete agreement between actuaries on the methodology to be used. Different bases are appropriate in different circumstances and for different companies. The choice of basis is a matter for actuarial judgement, and different actuaries could easily choose different bases for the same company and in the same situation. For instance, different shareholders have different perceptions of risk and could, therefore, require different risk discount rates. There is no specific guidance on either the method or basis of calculation of an embedded or appraisal value laid down by the Institute of Actuaries, although the Embedded Values Working Party has given some very broad general guidance. Appraisal values are successfully used in private negotiations for the sale or merger of life offices. In these circumstances, the methods, bases and sensitivities are fully disclosed to all parties who are, therefore, able to understand or be advised of all the implications. Appraisal values are also successfully used for the internal monitoring of the performance of life offices. In these circumstances also, the methods, bases and sensitivities are available to those using the appraisal. Our concern is that the publication of a single figure embedded or appraisal value, with only incomplete disclosure of methods and bases and no indication of the sensitivity to changes in the methods and bases, makes interpretation of the figure by shareholders highly conjectural. This is the reason for the statements in the appendices which Mr Goford referred to.

During the discussion the question of disclosure was raised on a number of occasions. While the views on the extent of disclosure are wide ranging, we felt that there is a general view that more disclosure of background presumptions and judgements is required. As this is a matter of central concern to the authors, who believe in greater disclosure, it is pleasing to find that there is widespread and growing support for the proposition.