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THE LLOYD'S REINSURANCE TO CLOSE PROCESS

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ABSTRACT

General insurance syndicates at Lloyd's are required to obtain a Statement of Actuarial Opinion (SAO) in relation to their solvency reserves. This paper focuses on the reinsurance to close (RITC) process at Lloyd's, which is not currently subject to such opinions, although some Lloyd's syndicates choose to obtain informal opinions from actuaries in relation to RITC. The paper analyses the current RITC process and suggests two types of opinion that actuaries could provide in relation to RITC. We also consider briefly financial condition opinions for Lloyd's syndicates. The International Accounting Standards Committee (IASC) published their issues paper on insurance accounting during the drafting of this paper, and we include some consideration of the application of the IASC's fair value concept to the future claim liabilities of Lloyd's syndicates. Lloyd's may be subject to unprecedented changes in the next few years, and we therefore consider the effect of these potential changes both on the existing actuarial solvency opinions and on our suggested opinions in relation to RITC. Our aim is to carry out an objective analysis of this unique reserving process and to offer suggestions as to how actuaries might add value to the process, taking into account how Lloyd's might change in future. Because of these changes, much of the paper has direct application to non-Lloyd's insurance companies.

KEYWORDS

Reinsurance to Close (RITC); Statement of Actuarial Opinion (SAO); Reserving; Lloyd's; Reinsurance; Commercial Premium; Transfer of Liabilities; Fair Value Accounting; Financial Condition Reporting

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1. INTRODUCTION

1.1 *Background*

1.1.1 Lloyd's is a unique market for insurance, established over three hundred years ago. It is a major force in world insurance and reinsurance markets, being one of the largest global business insurers, with 13% of the world's marine market and 23% of the aviation market (Source: April 1999

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data taken from Lloyd's website in December 1999). Despite its long history, actuarial involvement with Lloyd's only began about twenty five years ago, when actuaries were first used by syndicates to assist them with their reserving for the closing years of account. This reserving role has been formalised since then, with the scope of involvement changing significantly in the last five years. Substantial use was made of actuaries as part of the Equitas reserving project in 1995, and, shortly after this, the United States regulators introduced the requirement for Lloyd's syndicates to obtain actuarial opinions on the reserves in their U.S. situs trust funds. Finally, with effect from 31 December 1997, every Lloyd's general insurance syndicate was required to obtain a Statement of Actuarial Opinion (SAO) on its reserves for solvency purposes. We refer to these existing regulatory roles as 'statutory' roles in the remainder of this paper.

1.1.2 We are not going to dwell on the detail of the existing statutory role, because this is dealt with adequately by the relevant professional guidance notes (GN20 and GN33) and the associated Advisory Notes. (See General Insurance Board, 1999a, 1999b.) Rather, this paper will address actuarial and other issues in relation to reinsurance to close (RITC) for general insurance syndicates at Lloyd's, where there is currently no formal actuarial role. We have not considered life syndicates in this paper, as different issues arise in relation to these syndicates.

1.1.3 We have assumed that the reader has a basic grasp of Lloyd's terminology. Consequently, we have not sought to explain all the terms that we have used in relation to Lloyd's. We do, however, provide a full definition of RITC in Section 2, since we believe that there are a number of misconceptions regarding the meaning of RITC. Readers who are very familiar with RITC could, perhaps, skip the factual parts of that section. Several publications (e.g. Lloyd's Training Centre, 1999) provide the necessary background on Lloyd's. It is worth noting, however, that there are four types of capital providers or 'Names' at Lloyd's — corporate dedicated, corporate spread, private limited and private unlimited. We refer to all of these collectively as 'Lloyd's members' in the remainder of this paper.

1.1.4 Finally, by way of background, the reader should note that, in practice, the RITC has traditionally been the preserve of the active underwriter for a syndicate, together with the board of the managing agent. Over the last few years it has become increasingly common for there to be actuarial as well as underwriting input into the assessment of RITC. Indeed, the Lloyd's published *Code for Managing Agents: Management of Reserving Risk* (see ¶2.3.9 and Appendix 2) suggests that, whilst there should be an underwriting view of RITC, the managing agent should take independent advice, possibly from an actuary, to help it form an opinion on the RITC suggested by the active underwriter. This paper does not address the manner in which managing agents or underwriters might establish the RITC.

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Instead, it concentrates on what an actuary would have to do in order to provide an opinion on the RITC agreed by the board of the managing agent, and whether such an opinion would be of value.

1.2 *Historical Perspective*

1.2.1 Lloyd's origin dates back to a coffee house in London in the late seventeenth century, where financiers and merchants met to underwrite marine adventures. These original insurance contracts covered the duration of the voyage. By the end of the nineteenth century an underwriter would have typically accepted risks on behalf of three or four financiers, and by then the scope of risks had expanded to incorporate non-marine business. Risks had become more complicated, and, consequently, it became recognised that profit might not be determinable until the end of three or four years. Each underwriting year was treated separately, and managing agents took a prudent stance in their determination of the amount of profits to be released to Lloyd's members. The San Francisco earthquake of 1906 and the resulting turmoil in the market helped bring about the requirement for an annual audit in 1908. The 1908 *Instructions for the Guidance of Auditors* described a method of determining a value to be placed upon each year of account's liabilities, which can be described as a simple average chain ladder method. These instructions also stated that all claims from the pre-1907 accounts are to be placed against the 1907 account. This is the earliest reference that we have found describing the three-year accounting system, and the concept of RITC.

1.2.2 The twentieth century saw the introduction of new long-tailed types of insurance, where the period between payment of the premium and final settlement of the claims can run into many years. Another feature of this business is the increase in uncertainty surrounding the amounts to be paid. These features make it more difficult to determine profits at the end of a three-year period for syndicates whose business contains a large percentage of these long-tailed risks. The extreme difficulty of recognising and reserving adequately for latent claims (e.g. those arising from asbestos, environmental pollution and health hazards) on some of these longer-tailed policies contributed to Lloyd's troubles in the late 1980s and early 1990s, when it became evident that the reserves held for some policies written many years before were inadequate. Under rules specified by Lloyd's, the accounts of a syndicate have to remain open until the reserves can be determined with the required degree of accuracy/confidence. Actuaries used to have an involvement in confirming that there was sufficient uncertainty to justify leaving a year open, but have never had a role in determining whether there is sufficient certainty to permit closure, and this is an area where actuaries could, perhaps, add value. In the early 1990s many syndicates left years of account open, and, more recently, two syndicates could not close their 1996 year of account because of uncertainty

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surrounding U.S. and Canadian automobile extended warranty policies. It is possible to envisage situations where an event or development leaves considerable uncertainty surrounding the final outcome of the profits of a large number of syndicates at the end of the three-year period. In this situation, the managing agents for the syndicates involved would have to consider whether to leave the relevant years of account open. Lloyd's will have to accept that, with the existing structure, this could happen in the future, or they should, perhaps, consider an alternative to RITC.

1.3 *Why this Paper Now?*

1.3.1 Our motivation for writing this paper arises from a number of sources. First, as we outlined above, the actuarial role at Lloyd's has developed considerably in recent years. Although Lloyd's has indicated to us that it has no immediate intention of asking actuaries to undertake a formal role in relation to RITC, it is possible that this will change. It seemed desirable to explore the complex issues surrounding RITC in a paper to be discussed at a sessional meeting, in order to put the actuarial profession in a sufficient state of preparedness should such a role be introduced in future.

1.3.2 The second reason for writing this paper is that, regardless of whether Lloyd's decides to introduce a formal statutory role in relation to RITC, an increasing number of actuaries are being asked by managing agents to provide some form of opinion in relation to RITC, as opposed to solvency. This trend is, in part, driven by the increased pressure that is being put on managing agents by the Corporation of Lloyd's and by Lloyd's members to justify their reserving decisions. These opinions are clearly not statutory opinions, but, in fact, can have a more public profile than the existing SAOs. They are often not in relation to the RITC itself, but rather in relation to 'the reserves backing or underlying the RITC'. They can take the form of either a letter or report to the managing agent or, in at least one case, a more formal opinion that is reproduced in the syndicate's report and accounts. Given the existing statutory opinions at Lloyd's, we think that it is important that the relationship between these opinions and any such RITC opinions be explored fully. This is particularly relevant, since some market participants already think that the existing solvency opinions can be used directly to infer an opinion in relation to RITC, which is not the case. We also think that it is sensible for there to be an open discussion about exactly what form these 'informal' RITC opinions might take, and we aim to stimulate such discussion through this paper.

1.3.3 Anyone who is involved with the Lloyd's market will be well aware that, starting with Reconstruction and Renewal (which started in the early 1990s, and was completed in 1996), the market has changed significantly in recent years. Perhaps the most significant change has been the increase in the amount of corporate capital in the market, which has risen from 23% of the total stamp capacity in 1995 to 73% in 1999, and is

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projected to reach 80% in 2000. Other changes include the introduction of the auction system for trading capacity, the establishment of Lloyd's captives, the use of risk-based capital to set members' funds at Lloyd's requirements, the purchase of a reinsurance contract to protect the central fund and the increasing trend towards merging syndicates. Changes on the horizon include reforming the distribution system and the new regulatory regime to be introduced by the Financial Services Authority. None of these past and future changes, with the possible exception of Equitas, is, though, as fundamental as removing the annual venture system. It might be thought that the RITC system will not last for much longer. However, although not necessarily a pre-requisite, the removal of the annual venture system is likely to precede the removal of the RITC. Although we think that, eventually, the annual venture system will be removed, we do not see this happening in less than three years, given that the system is so fundamental to the structure of Lloyd's. Because of the three-year accounting system, RITC would still need consideration for a further two years after removal of the annual venture system (and longer than this if a syndicate could not close at the normal time). For example, if 2002 was the last year under the current annual venture system, then RITC would need assessing on this year in 2004, assuming that the three-year accounting system was also retained for the 2002 year of account. At the very least, RITC will need considering up until the 2000 year of account closes at the end of 2002.

1.3.4 Even if RITC were to be abolished at some time in the future, there is still likely to be demand, either from market participants, or perhaps from regulators, for some form of 'fairness' or 'reasonableness' opinion in relation to the reserves of Lloyd's syndicates. Most of the analysis that we have carried out in this paper would still apply to such opinions at Lloyd's, as well as to non-Lloyd's reserve opinions. Hence, our contention is that much of this paper applies to Lloyd's both pre and post any removal of the RITC system, and to the company market as well. Some of the groundwork that we have done here will also be of direct application to the possible future role that actuaries may have with regard to assessing the financial condition, or soundness, of general insurance companies. The relevance of this paper to other areas of actuarial work in general insurance, including financial condition reporting, is addressed further in Section 8. For readers who do not have an interest in the Lloyd's market, we suggest that they read Section 8 first, which will help them to identify other parts of the paper that might have application outside Lloyd's.

1.4 *Reserving Issues at Lloyd's*

1.4.1 In order to understand the reserving context in which the RITC is calculated, it is necessary to appreciate some of the complexities associated with reserving at Lloyd's. These include, but are certainly not limited to, the following:

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— Much of the business written at Lloyd's is done on a subscription basis, so that participants often take less than a 100% share of individual risks. This can mean that even syndicates with small premium volumes can write a very wide range of risks; changes in the shares taken over time can also affect development patterns.
— The risks written at Lloyd's are of an exceptionally diverse nature. This can mean that, for some classes of business, the underlying 'loss process' is uncertain, and that groups that are sufficiently homogenous for reserving purposes are sometimes very small.
— There are often extensive and complex outwards reinsurance arrangements, which can make reserving at a net level difficult.
— There are significant volumes of overseas business, including large volumes of U.S. exposures. This can mean, for example, that, overseas legal systems can lead to uncertain future loss development and that reserving needs to be carried out in a number of currencies.
— Underwriting years (i.e. years of account in Lloyd's parlance) can have long exposure periods, caused, for example, by the use of binders and lineslips and by contracts with long exposure periods attaching to a single year of account.
— The market is highly competitive, with pressure in recent years, not only on rates themselves, but also on contract terms. This can make extrapolation from past loss ratios difficult.

1.4.2 Many of these issues are also relevant to companies operating outside Lloyd's, particularly London Market companies. Some of the issues are referred to in other papers (e.g. Maher, 1995), but we still think that there is scope for further analysis in this area, particularly with regard to the allowance for outwards reinsurance when estimating net reserves. In addition, we believe that the overall process of reserves at Lloyd's could be improved by the following:
— There could be more centralised reserving for major market lineslips/ contracts. At present, although the lead underwriter(s) will recommend case reserves, there is little centralised estimation of ultimate claims, resulting in duplication of effort.
— There could be improved analysis by individual syndicates or at market level, possibly with assistance from actuaries, of premium rate movements across years of account, allowing for changes in contract terms, etc. This could assist with adjusting historical loss ratios to derive prior loss ratio assumptions in the Bornhuetter-Ferguson reserving method, and is also a vital management tool, facilitating planning and strategic underwriting decisions.

1.5 *Other Actuarial Papers on RITC*

There have been two previous actuarial papers on the subject of RITC —

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both presented at the general insurance actuarial convention in 1990 (Rice *et al*., 1990; Larner, 1990). The first of these provides a good introduction to the subject of Lloyd's and to RITC, although there is a clear need to bring things up to date, as so much has changed at Lloyd's since this paper was written. The second contrasted different reserving methods rather than considering particular issues associated with the derivation of RITC itself. Neither of these papers addressed the issue of actuarial opinions in relation to RITC, probably because, at the time they were produced, no-one predicted that actuaries would have any formal statutory role at Lloyd's.

1.6 *Remaining Sections of the Paper*

1.6.1 The next three sections of this paper follow a logical progression from:

— consideration and critique of the existing RITC system used at Lloyd's (Section 2); to
— consideration of actuarial opinions in relation to a 'theoretical' actuarial approach to the estimation of RITC (Section 3); to
— consideration of actuarial opinions in relation to the reserves underlying the RITC (Section 4).

1.6.2 In Section 5 we consider the relative advantages and disadvantages of the two approaches to actuarial opinions outlined in Sections 3 and 4, and provide our conclusions regarding our preferred approach. We then consider some taxation issues (Section 6), look at the effect of possible future changes at Lloyd's on the provision of actuarial opinions (Section 7), and address related issues concerning other actuarial roles in general insurance (Section 8). Finally, we draw out some overall conclusions in Section 9.

2. Defining RITC

2.1 *Introduction*

2.1.1 The Lloyd's annual venture system means that any Lloyd's member provides capital for one underwriting year of account at a time. After having underwritten one year of account, each Lloyd's member can decide whether to continue underwriting for the next year of account. Each individual year of account, therefore, begins its life as a separate annual venture or 'economic entity', independent of all other years of account.

2.1.2 The Lloyd's members for any given year of account cannot take their profits at the end of the year of account. Instead, they must wait a period, typically until the end of three years from the beginning of the year of account, before they receive a profit (or are asked to make good their losses) from that year of account. If, however, a particular Lloyd's member

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had a solvency deficit (across all their syndicate participations) at the end of years one or two, then the Lloyd's member would be asked to make good this deficit at that time, which he must do if he wishes to continue to underwrite.

2.2 *The RITC Concept*

2.2.1 RITC can be thought of as a 100% quota share reinsurance of a year of account. To extend this slightly, RITC is the payment of a reinsurance premium in respect of one year of account (the 'closing' year), by the Lloyd's members for that year of account (the 'transferring' or 'ceding' Lloyd's members), to a reinsurance vehicle. This is normally carried out at a valuation date three years after the year of account begins, and the reinsurance vehicle is typically the subsequent ('open') year of account (the 'accepting' or 'reinsuring' year) of the same syndicate, although it does not have to be.

2.2.2 This means that, in the normal course of events, a year of account remains open for a period of three years, and it is then reinsured into the next year of account of the same syndicate. This process can perhaps be best understood by means of a simple diagram, as in Figure 2.1.

2.2.3 From Figure 2.1 it can be seen that, at any one time, only three years of account are typically open, and that all closed or 'prior' years of account are typically reinsured into the oldest of the open years of account. To avoid confusion between an open year of account on its own and the same open year of account including any closed years reinsured into it, the phrase 'pure year' is often used to refer to the former.

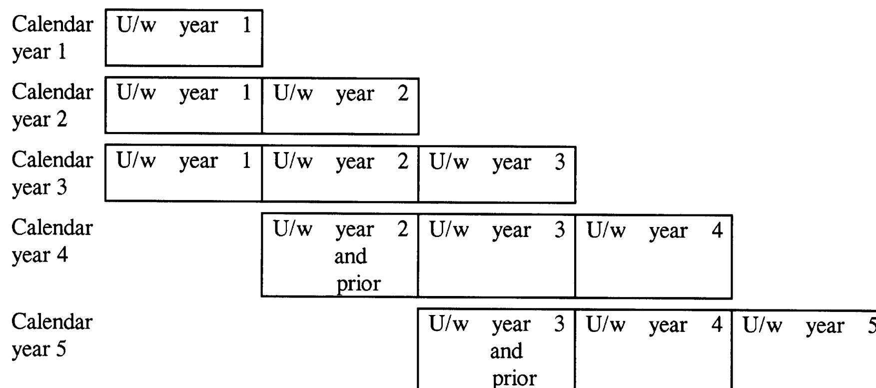

Figure 2.1

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2.2.4 The liabilities of the closing year are accepted by the new Lloyd's members (the 'accepting' or 'reinsuring' Lloyd's members) to, in effect, draw a line under the liabilities of the closing year of account. RITC can, therefore, be thought of as an unlimited run-off reinsurance policy provided by the Lloyd's members of one year of account (the 'accepting' year) to the Lloyd's members of another year of account (the 'ceding' year).

2.3 *RITC and Legislation*

2.3.1 Legislation surrounding the conduct of insurance business at Lloyd's includes the Insurance Companies Act 1982, the Lloyd's Act 1982, related Regulations, the Lloyd's Byelaws and various Regulatory Bulletins and Codes of Practice published by Lloyd's. We have examined the relevant parts of these documents that make reference to RITC. Whilst it is clear from these documents that the concept of RITC is well defined, we have not been able to find an unambiguous description of all the constituent parts of RITC and the basis on which they should be established. Instead, one is left to infer such components and bases from a variety of documents. Those having an effect on RITC include the Reinsurance To Close Byelaw (a one-page technical document), the Solvency and Reporting Byelaw, the Valuation of Liabilities rules and the Valuation of Assets rules (the latter two both being published annually). The specific documents that are most important include:
— the Core Principles Byelaw;
— the Agency Agreements Byelaw;
— the Syndicate Accounting Byelaw;
— the Code for Managing Agents: Management of Reserving Risk; and
— the Code for Managing Agents: Managing Underwriting Risk.

2.3.2 In addition to the above, Lloyd's List Publishing issues the *Lloyd's Market Handbook*, which provides guidance on the interpretation of the byelaws. Part 8, 'Underwriting Agents: Syndicate Accounting', and, in particular, Section 8.9 on reserving, is of relevance to the RITC.

2.3.3 Where appropriate, we have included extracts from some of these documents in Appendix 2, and have referred to these extracts below to summarise the key points.

2.3.4 *The Core Principles Byelaw*, Schedule 2, Clause 4, includes the words: "An agent should conduct the affairs of each of the members for whom it acts in a manner which does not unfairly prejudice the interest of any such member''. From this one can infer a general obligation to strive for equity between the treatment of different cohorts of Lloyd's members, and, by extension, for equity between transferring and receiving Lloyd's members in an RITC.

2.3.5 *The Agency Agreements Byelaw* gives the managing agent authority to effect an RITC. The relevant extracts are in Appendix 2. One could, perhaps, précis this as: "The managing agent is authorised, by each

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Lloyd's member for which it acts, to calculate an RITC premium for, and effect an RITC from, the closing year of account to a subsequent year of account, provided that such RITC is equitable between both ceding and reinsuring Lloyd's members''.

2.3.6 *The Syndicate Accounting Byelaw* expands on these principles. The relevant extracts are in Appendix 2. This byelaw requires the syndicate auditor to opine that the profit and loss, as shown in the underwriting account of a closed year of account, is 'true and fair'. It additionally requires that the reinsurance to close premium is equitable between the ceding Lloyd's members and the accepting Lloyd's members, provided the latter are members of a subsequent year of account of the same syndicate. If, for any reason, these conditions are not met, then this should be identified in the annual report, which should show the effect of the deviation from the principles of the Syndicate Accounting Byelaw.

2.3.7 In the event that the RITC is paid to an independent third party reinsurer (which, for all practical purposes, will currently be another Lloyd's syndicate), then the duties of the managing agent appear to depend on whether or not the reinsurer is a Lloyd's syndicate under his management. If not, then the managing agent for the ceding syndicate no longer has a duty to the reinsuring Lloyd's members. In this case the RITC becomes a commercial transaction and the managing agent should aim to get the best possible terms for the ceding Lloyd's members. By the same token, the syndicate accepting the RITC will most likely wish to load the premium it quotes for profit and other contingencies.

2.3.8 If, however, the receiving syndicate is also under the same management, then the references above to the Core Principles Byelaw and the Agency Agreements Byelaw appear to imply that the managing agent's duties are effectively the same as those in the normal situation of a transfer within a syndicate; that is that the managing agent should act in such a way as to be fair to both the ceding and the accepting Lloyd's members. The interpretation of 'fairness' might, however, be different from the normal situation. With the continuing consolidation of syndicates within agencies, there are likely to be several instances of RITCs being effected between syndicates within the same managing agency, and perhaps Lloyd's should consider making clear precisely what managing agents' duties are in these circumstances, where it has not already done so.

2.3.9 *The Code for Managing Agents: Management of Reserving Risk*, was first published by Lloyd's on 28 October 1998, pursuant to paragraph 2A of the Core Principles Byelaw, after consultation with interested parties (including the General Insurance Board). It considers, primarily, the role and responsibilities of the managing agent in the reserve setting process, whilst recognising the integral role of the active underwriter and his staff and of actuaries. The relevant extracts are given in Appendix 2. In summary, the Code:

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— is not mandatory, although compliance with it is strongly recommended;
— attempts to encourage a professional, consistent and rigorous approach to reserve setting;
— clearly acknowledges the fact that reserves for RITC and reserves for solvency need not be the same; and
— recognises the role of the actuary in the reserve setting process at Lloyd's.

2.3.10 *The Code for Managing Agents: Managing Underwriting Risk*, was originally published by Lloyd's on 13 March 1997, pursuant to Core Principle No 9, after consultation with interested parties. A subsequent consultative document was published on 5 November 1998, although the 1997 document remains the current version at the time of writing.

2.3.11 The Code states that: "The methodology used in determining the RITC and open year reserves should be subject to an independent assessment carried out by an actuary, by an expert reviewer, or by other individuals with the appropriate skills and experience".

2.3.12 *Lloyd's Market Handbook*, Part 8, 'Underwriting Agents: Syndicate Accounting', Section 8.9, 'Guidance for Reserving': Part 8 is guidance for the interpretation of the Syndicate Accounting Byelaw.

2.3.13 Section 8.9 is intended as guidance for all reserving needs, but makes particular reference to RITC. It is not prescriptive, but, instead, aims to "provide a framework outlining the procedures to be adopted and the various aspects of the process to be considered in deriving an appropriate level of RITC". In many respects, it covers very similar ground to the newer *Code for Managing Agents: Management of Reserving Risk*, referred to in ¶2.3.9.

2.3.14 Paragraph 8.9.1.4 refers to two recommendations made in the January 1992 Lloyd's Task Force report, that have a direct bearing on the reserving guidelines. First: "the recommendation to endorse the principle of a risk premium as part of the RITC", and second: "the proposal to permit explicit discounting". Neither of these is dealt with by the Handbook, but their existence does demonstrate that Lloyd's considered this issue a number of years ago.

2.3.15 Section 8.9.2, 'Byelaw provisions relating to the reinsurance to close', emphasises that equity between ceding and reinsuring Lloyd's members arises only when the RITC is made between different years of account of the same syndicate, and that it arises because the managing agent is then acting for both sets of capital providers. It also reiterates the requirement for the annual report to give a true and fair view of the profitability, or otherwise, of a closing year, after deduction of the RITC premium, hence the importance of determining a 'fair' RITC premium.

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2.3.16 Section 8.9.3, 'Factors relevant in determining reserves', deals with some of the constituent parts of the RITC premium. These include "the known outstanding claims and the claims incurred but not yet reported (IBNR), together with the costs and risks associated with them''. It also refers to the need for the RITC premium to be fair to both ceding and reinsuring Lloyd's members.

2.3.17 Subsequent sections offer an incomplete list of items to be considered when estimating the RITC premium, although it is interesting to note that levels of claims inflation, borrowing costs, future investment income and currency fluctuations all merit a mention. In fact, Section 8.9.9, 'Future investment income', states that: "The effect of future investment income, or the lack of it, should be carefully considered. Future investment income is, in some circumstances, regarded as a cushion against future reserve deterioration and future expenses. Whilst it is true that long-tail liabilities have most potential to deteriorate but also have high investment returns, it is not always safe to assume that investment income will provide sufficient margin''. However, the section finishes with the words: "Paragraphs 8.9.9.1 and 8.9.9.2 should not be taken as requiring that the value of future investment income be deducted in determining RITC''.

2.3.18 Finally, Section 8.9.16 sets out the way in which the RITC should be reported, from which it is clear that the gross, ceded and net known outstandings should be shown separately, as should the IBNR.

2.3.19 It is clear that, like any reinsurance contract, RITC is not a novation or a commutation of liabilities. For any syndicate, within each year of account, every contract of insurance written is between the insured and, ultimately, the Lloyd's members for that syndicate year of account. The existence of a reinsurance between the original insurer (in this case the Lloyd's members) and a third party does not affect this contract. However, Lloyd's unique chain of security means that the position is different from that which applies to other reinsurance contracts in that, if the reinsuring Lloyd's members cannot meet their financial obligations arising from accepting the liabilities associated with the RITC, then the burden would fall first upon Lloyd's central fund. Only if the central fund were exhausted (after allowing for the callable layers of the central fund and the recently effected central fund reinsurance protection) would the Lloyd's members for the ceding year be required to meet these obligations. For all practical (if not strictly legal) purposes, therefore, the RITC has a similar effect to a transfer of liabilities from one group of Lloyd's members to another.

2.4 *The Components of RITC*

2.4.1 Having reviewed some of the legislation and other Lloyd's documents relating to RITC in Section 2.3, we concluded, in ¶2.3.1, that,

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whilst the concept of RITC is clearly defined, its components, and the basis for their calculation, are not so well defined. Therefore, it might be useful to provide our interpretation of the components, which we do in this section. Subsequent sections consider the basis for their calculation.

2.4.2 The typical components of an RITC are shown in Table 2.1.

Table 2.1. Components of the RITC premium

		Closed year (1)	...	Closed year (*n*)	Closing year	RITC years
	Net notified outstanding claims					
plus	Net IBNR claims					
equals	Net future claims reserve					
less	Net future premiums					
equals	Net reserve					
plus	Claims handling expense provision					
plus	Reinsurance bad debt provision					
plus	Any other additional provision					
equals	Net RITC premium					

Note: Figures are for the whole account in Sterling, U.S. Dollars, Canadian Dollars, and all converted to Sterling, and must be shown both gross and net of reinsurance.

2.4.3 Brief notes on the elements of the RITC premium follow.

2.4.4 *Notified outstanding* (*o/s*) *claims*, or case reserves, are generally estimated by attorneys appointed by Lloyd's claims office (LCO) and/or the leading underwriter(s) or syndicate claims department on a case-by-case basis. As a distinct item on their own, they fall outside the scope of all the current SAOs provided by actuaries in the United Kingdom. However, they form a central element of the RITC premium.

2.4.5 *Incurred but not reported claims* (*IBNR*) are an element, within which we include future development on known o/s claims, i.e. incurred but not enough reported (IBNER) claims, as well as incurred claims yet to be notified. This is typically calculated as the difference between estimated ultimate claims and claims incurred to date. It must be estimated both gross and net of ceded reinsurance recoveries, and, at least for longer-tailed syndicates, generally comprises the major element of current SAOs. This is also likely to be the case for such syndicates with an SAO in relation to the RITC.

2.4.6 *Future premiums* are generally deducted from the above two items when calculating the reserves for which the actuary provides the current SAOs, and any SAO for RITC would be no different. However, as it would be given at the end of three years from the start of the year of account, the amount of any future premiums would be small in most cases.

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2.4.7 *Claims handling expenses* (*CHE*), both direct and indirect (or allocated and unallocated loss adjustment expenses, ALAE and ULAE respectively, in U.S. parlance) form part of the RITC premium, so would be included in any SAO for RITC. CHE are included within the SAOs for Lloyd's solvency, so again, this is nothing new for U.K. actuaries.

2.4.8 *Reinsurance bad debt*, or, more correctly, provision for future non-collectible reinsurance recoveries, forms a part of the current SAOs, and would also be included in any SAO for RITC.

2.4.9 *Any other additional provision* occurs, typically, for particular problem contracts. To the extent that these are reserves in respect of future claims, then current SAOs already cover them. This heading might also cover, for example, risk margins for uncertainty. These cannot be considered in isolation, but must be part of a larger discussion, which includes the assets held and future investment income and the volatility of the ultimate claims, with reference to number, size and timing of payments. These aspects are discussed in Section 3.

2.4.10 The *Lloyd's Valuation of Liabilities Rules*, published annually, prohibit the discounting of claims reserves for solvency purposes, but are silent on the subject of claims reserves for RITC. They specify only that the reserves for solvency cannot be smaller than those for RITC. This means that it is possible to set an RITC premium using claims reserves that have been discounted to take account of future investment income to be earned on those claims reserves.

2.4.11 Historically, RITC premiums have not been discounted, and future investment income may have been assumed to be a margin to allow for, variously, CHE, reinsurance bad debts and uncertainty in the estimation of future claims payments, be it due to size, number or incidence of future claims. More recently, Lloyd's has required that CHE are explicitly provided for, but clearly future investment income still may not necessarily make good all of the things that it is implicitly being used for (or could, of course, more than compensate for these things). One alternative would be to set the RITC premium on the basis of discounted claims reserves, with an explicit risk margin to allow for the uncertainty of the future claims reserves. This is discussed in more detail in Section 3.

2.4.12 Having considered the constituent parts of the RITC premium, it is instructive to consider the additional items that go to make up the underwriting account for the closing year of account. The underwriting account shows the profit (or loss) due to (or from) Lloyd's members arising from the closing year; an example underwriting account is given in Table 2.2.

2.4.13 We would argue that the only item in Table 2.2 that might be subject to an actuarial opinion (voluntary or statutory) would be the net RITC premium, and that the other items should be outside the scope of any SAO. The exclusion of these other items should, perhaps, be made clear in an SAO relating to the RITC.

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Table 2.2. Closing year underwriting account

		RITC years
	Net signed premiums	
plus	Net RITC premiums received	
less	Net paid claims	
less	Net RITC premium (see above)	
plus	Profit or loss on exchange	
less	Syndicate expenses	
plus	Exceptional income	
equals	Balance on technical account	
plus	Investment return [1]	
equals	Result before Names' expenses	
less	Profit commission	
less	Other Names' expenses	
equals	Result after Names' expenses	
less	Members' agent's fees	
equals	Result before tax	

Notes:
(1) = Investment income + Realised investment gains + Unrealised investment gains − Investment expenses.
(2) Figures are for the whole account in Sterling, U.S. Dollars, Canadian Dollars and all converted to Sterling, and must be shown both gross and net of reinsurance.

2.5 *Why has RITC Survived for so Long?*

2.5.1 To some observers it might seem surprising that the concept of RITC within a three-year accounting system has survived for so long, especially given some of the classes of business that are written now, which were not prevalent during the early years of RITC. For example, there are classes of business written now that have an exposure period in excess of three years or where the period from incidence of a claim to reporting and ultimate settlement can be significantly in excess of three years. Further, the uncertainty attaching to the estimate, after three years of future liabilities for such classes, is often significantly greater than the uncertainty surrounding the estimates of future liabilities for business typically written in the early part of the twentieth century, when RITC was first introduced. However, whilst the annual venture system remains and Lloyd's members provide capital for only one year of account at a time, then there is a need for a mechanism to allow those Lloyd's members to receive their profits/pay their losses and, if they wish, leave Lloyd's. An extreme case of the latter is the need to settle the estate of a deceased Lloyd's member.

2.5.2 There is also nothing unusual in leaving a year of underwriting open for a period before declaring a profit; this is simply a form of funded accounting. This is still used commonly in the company market for classes of business that are deemed too volatile to be capable of accurate determination of reserves, and hence of profits at the end of one year.

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2.5.3 What is different about the Lloyd's RITC system is that, because of the annual venture, the RITC determines the profit or loss that accrues to a particular group of Lloyd's members. When groups of years of account are reinsured into the subsequent underwriting year, the Lloyd's members backing the accepting year of account take on the risk of future adverse development (or potential favourable development) of the years of account that are reinsured into their year of account. Thus, it is primarily the annual venture system that has resulted in the concept of RITC remaining at Lloyd's.

2.6 *Impact of RITC on Peer Comparisons*

2.6.1 The advent of actuarial opinions has resulted in greater emphasis being placed on the ultimate loss ratios for the open years than has hitherto been the case. It might be argued that this should allow the Lloyd's market to take corrective action on inadequate premium rates sooner than would otherwise be the case. Conversely, it could also lead to earlier weakening of the rates if it became evident that a certain line, or the market as a whole, were extremely profitable. The extent to which this is true will be influenced by the ability of Lloyd's underwriters to charge different rates from those of the rest of the insurance market.

2.6.2 The requirement for the RITC premium to be equitable should, in theory, cause the results for any year of account to reflect more closely the rating adequacy and claims experience of the underlying risks than in the company market, where it might be thought easier to smooth results across years.

2.6.3 Indeed, some market commentators have suggested that profits at Lloyd's are more volatile than in the company market, and that this has played a part in Lloyd's receiving a lower security rating than an equivalent entity in the company market. We think that these comments may stem partly from a misunderstanding of the different accounting regimes that apply to Lloyd's and to the company market. We are not convinced that profits at Lloyd's are more volatile than in the company market, but believe, rather, that the way in which they are accounted may make them appear to be more volatile. However, the fact that the misunderstanding can arise in the first place is a cause for concern.

2.6.4 On the other hand, insurance regulators in the U.S.A. have recently commented that they would prefer the returns from insurance companies to give a more true-and-fair view of each year's performance. If this were to be introduced, it might be expected to lead to the results of the U.S. company market coming more into line with those of Lloyd's. This would counter the observation in ¶2.6.3.

2.6.5 What is certain is that the different accounting practices at Lloyd's compared to its company market peers make a like-for-like market-level comparison of performance very difficult.

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2.7 *Possible Change to the Existing RITC System*

2.7.1 Overall, we would argue that a system that monitors the underwriting performance of each year of account separately, using best estimates of the reserves, has a lot of merit. Given that Lloyd's currently operates such a system, we would see little reason to suggest wholesale changes. However, there are certain areas where we perceive the system to be inadequate for the nature of much of the business currently underwritten at Lloyd's. What remains to be answered, therefore, is how the RITC system, as currently formulated, might be amended to ensure its continued relevance to Lloyd's members.

2.7.2 As mentioned in ¶1.2.2, it is not hard to envisage a situation where the level of uncertainty in the estimate of future claims is such that syndicates might once more have to consider leaving years of account open. This will particularly be the case if the modern trend to a 'blame and compensation culture' and ever increasing litigation continues. Even where it has been possible to close a year of account, it is possible that a large claim, or claims, can emerge subsequently, causing a material change in the results for a later year of account. It might be argued, therefore, that each closing year should pass on a risk premium to cover such eventualities. We believe that this can best be done by including in the calculation of the RITC premium an explicit risk margin over and above the discounted claims reserve, rather than simply relying on the undiscounted claims reserve to do this. Indeed, as mentioned in ¶2.3.14, this has been raised by Lloyd's in the past. This approach to RITC is considered further in Section 3.

2.7.3 Table 2.3 shows the market capacity for years of account 1997 to 1999. This clearly shows that the percentage of capital that is provided by corporate entities has been increasing, and this is expected to continue. The current estimate for the percentage of corporate capital in 2000 is 80%.

2.7.4 Whilst the RITC premium does provide a means for the non-corporate Lloyd's members to extract their profits after a reasonable period of time, it is less useful for corporate Lloyd's members, many of whom are

Table 2.3

Year of account	1997 £m	1998 £m	1999 £m
Individual Names	5,824	4,105	2,700
%	44	40	27
Corporate Names	4,500	6,064	7,170
%	56	60	73
Total	10,324	10,169	9,870

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used to company style accounting for insurance profits, (e.g. on a U.S. GAAP basis). It is conceivable, therefore, that a change to the annual venture and to the current RITC system will be driven by the needs of corporate capital.

2.7.5 Possible changes at Lloyd's are considered further in Section 7.

2.8 *Actuarial Opinions in relation to RITC*

We have identified two possible 'items' on which an actuarial opinion could be given in relation to RITC (either statutory or otherwise). First, the opinion could be provided on a theoretical RITC itself, which allows appropriately for all the elements, including risk margins and investment income. We refer to this item as the 'actuarial RITC'. Alternatively, the opinion could be provided on the undiscounted reserves backing the RITC, which we refer to as the 'RITC reserves'. These are considered in Sections 3 and 4 respectively. In Section 5, we then look at the relative advantages and disadvantages of each approach, together with our conclusions regarding our preferred approach.

3. The 'Actuarial RITC'

3.1 *The Actuary's Role in the RITC Process*

Although there is currently no statutory actuarial role in relation to RITC, actuaries may, however, be involved in the process for establishing the RITC in one or more different ways. For example:

— an in-house actuary may liaise directly with the underwriter and may assist the underwriter in setting the RITC premium;
— an external actuary may be commissioned specifically to assist in setting the RITC (or to provide 'quasi-RITC' opinions on the RITC reserves);
— the actuary's opinion as to the adequacy of the reserves established for solvency purposes may be something that the underwriter takes into account in setting the RITC (which in the majority of cases is equal to the reserves established for solvency purposes); and
— actuaries may become involved in providing input to an auditor in relation to the RITC.

3.2 *Investment Income and Risk Margins*

3.2.1 In all of the above situations, the opinions and views formed by actuaries are almost universally limited to opinions and views being given on the adequacy of undiscounted reserve amounts. This corresponds with the general practice within Lloyd's, whereby underwriters responsible for establishing the RITC premium either:

— do not consider future investment income at all in setting an RITC; or

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— perhaps, alternatively, do consider future investment income, but consider the value of that future investment income to be an implicit offset against the risks borne by the accepting Lloyd's members in receiving the RITC in relation to one or more of:
  — the uncertainty in the undiscounted reserve estimate;
  — the uncertainty in the future payment pattern;
  — the uncertainty in future investment yields;
  — reinsurance irrecoverability not covered by the bad debt reserve;
  — mismatching between assets and liabilities; and
  — unallocated claims handling expenses (although this offset was effectively removed when these expenses were covered by the solvency SAOs with effect from 31 December 1998).

3.2.2 We believe that most practitioners in the Lloyd's market accept this practice at the current time. We are not aware of any syndicates that explicitly allow for investment income and risk margins. Our view is that an actuarial opinion in relation to the RITC itself should ideally go beyond consideration of just the RITC reserves. In particular, it may be considered that recognition should be given to the situation where undiscounted reserves might be deemed to be reasonable in themselves, but where such reserves might be materially different (higher or lower) from an amount that would make proper allowance for the transfer of liability and risk to which the RITC relates.

3.2.3 This approach would give recognition to the theoretically appropriate level of an RITC from an actuarial standpoint, reflecting the fact that the RITC is a premium between two parties (two groups of Lloyd's members) for the transfer of liability and risk between those two parties. This would involve the consideration of future investment income, by discounting the undiscounted reserve amount. In addition, it would be necessary to make some allowance for the risks outlined in ¶3.2.1 (possibly by quantification, in some way, of the appropriate risk margins). This allowance for risk would represent the diminution of economic value associated with the uncertainties named above. This type of RITC is the 'actuarial RITC' referred to at the end of Section 2.

3.2.4 Our view is that, at present, there are no syndicates that set their RITC on this basis. If they were to do so in future, then it will be necessary to consider several issues in relation to quantification of risk margins. In particular:

— There are a range of modelling techniques that can be used to quantify the risk margins. We have identified a number of possible approaches to this in Section 3.4.
— There is currently no specific U.K. professional actuarial guidance in relation to the identification of risk margins in general insurance.
— The calculation of the risk margin should reflect the degree of 'risk'

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within the transaction. In order to try to find what an acceptable level of risk margin might be, the risk profile of the accepting/ceding Lloyd's members needs to be considered, together with the marginal effect of the transaction on the risk profile.

- Thought needs to be given as to whether the risk margin should only allow for so-called systematic or non-diversifiable risk (sometimes referred to as market risk). It can be argued, using economic theory, that when viewed from a shareholder perspective (i.e. in the case of Lloyd's, the Lloyd's members), the risk margin should only compensate for systematic or market risk; the diversifiable non-systematic risk (sometimes referred to as specific risk) should not be allowed for in the risk margin. On the other hand, the unique characteristics of Lloyd's RITC, which could be regarded as a form of 'closed market', might justify a different approach. Even if much of the contribution to risk margin could be demonstrated to be diversifiable, it could be argued that current market practice is not to accept a transfer of liabilities without a risk margin.
- The issue is complicated by the different considerations that might apply when the RITC is being transferred to the same syndicate, to a different syndicate in the same managing agency, to a different syndicate in a different managing agency, or, indeed, to a non-Lloyd's company. The price for risk might be different in each case.

3.2.5 The subject of risk margins (in both a Lloyd's or non-Lloyd's context) would merit a paper in itself, and, until further detailed thought has been given to these and other issues, we do not feel able to offer a consensus view on its treatment in a Lloyd's RITC context. However, as mentioned above, we do suggest a number of actuarial models in Section 3.4 that can be used to quantify risk margins.

3.2.6 In addition, of course, use of an actuarial RITC would require a discount rate to be set. We do not favour the approach of reducing the discount rate to compensate for uncertainty in the cash flows. Rather, we think that the discount rate should be on the basis of a risk-free matched rate, with the risk margin being used to allow for all sources of uncertainty.

3.2.7 It may be that, in some cases, the undiscounted reserves would be broadly equivalent to the actuarial RITC. This means that the implicit offset between future investment income and risk margins that underlies current practice within Lloyd's will be broadly appropriate in these situations. There will, however, almost certainly be cases where the theoretically appropriate level of an RITC will be materially different (higher or lower) from an RITC based on undiscounted claim amounts. For example, in the current relatively low interest rate environment in the U.K., it is possible that, for some classes of business, the investment income offset will be lower than an appropriate margin for risk.

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3.2.8 In the case of a dedicated corporate member, where there is common capital across different years of account, the concept of a transfer of risk does not really apply, and hence an undiscounted best estimate reserve might be appropriate when calculating the RITC. Our preferred approach, however, would be still to use the actuarial RITC concept. This is partly because it is consistent with a 'fair value' approach outlined below.

3.3 *'Fair Value' Accounting*

3.3.1 During the drafting of this paper, IASC (1999) was published. The IASC paper puts forward the concept of 'fair value' accounting. Fair value of insurance liabilities has not yet been defined, and its calculation basis has not been stipulated. However, the general concept of fair value can be defined as the value at which two knowledgeable, willing, arms-length parties would conduct a transaction. The Faculty and Institute of Actuaries have endorsed the concept of fair value accounting in a press release in December 1999.

3.3.2 For assets, this concept is relatively straightforward, so that, for example, the fair value of traded securities, where there is a deep liquid market, is effectively the market value. The 'arms length' part of the concept is designed to eliminate effects that do not affect the 'real' market value (e.g. trading as a result of some previous contract, such as an option). The 'willing' part is designed to eliminate distress selling for liquidity purposes. Finally, 'knowledgeable' is designed to eliminate uninformed transactions.

3.3.3 For insurance liabilities the situation is less clear cut, since there is no deep liquid public market from which we can observe market prices. There is an increasingly active mergers and acquisitions (M&A) market, and there is a fairly active reinsurance market in which insurance contracts are exchanged. However, there is little public information available as to what drives the transaction prices (although many active in the M&A or reinsurance fields do have enough knowledge to indicate the current range of factors driving the markets, and quoted equity prices might provide some information). We understand that the IASC, with assistance from the International Actuarial Association, may, therefore, suggest 'benchmark' type approaches to the estimation of fair value of insurance liabilities. These may not produce fair liability values at a given moment, but will be intended to produce consistent and coherent accounts across different territories that write insurance business.

3.3.4 For general insurance liabilities, one possible interpretation of fair value would be something similar to our actuarial RITC, defined above (i.e. effectively discounted reserves plus risk margin). In fact, we understand that the General Insurance Board interprets fair value as requiring outstanding claims provisions to be set equal to an amount equivalent to our actuarial RITC (as evidenced by the comments of the Chairman, in the discussion of O'Keeffe & Sharpe, 1999, pp342-343).

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3.3.5 The use of a risk margin, as in the actuarial RITC, would be consistent with the 'knowledgeable' and 'willing' parts of the fair value concept. This is because we assume that a willing buyer would want reserves in excess of the expected values in order to assume the relevant liabilities (ignoring any potential offset from goodwill arising from future business). The amount in excess of the expected value would reflect the risks and costs associated with assuming the liabilities. Without a deep liquid public market for general insurance liabilities, there will, however, always be a considerable degree of judgement involved in assessing the risk margin, and hence fair value. This is an area, therefore, where the professional judgement of an insurance specialist, such as an actuary, could be used. We believe that this judgement should be an integral part of a rational process for estimating the actuarial RITC, rather than as a substitute for such a process. We discuss possible models for estimating the actuarial RITC in Section 3.4.

3.4 *Actuarial Models*

3.4.1 In order to investigate the effect of future investment income and risk margins on the liabilities of an individual syndicate, the actuary would need to model the future performance of the syndicate (in relation only to liabilities covered by the RITC). This is likely to be a complex process, and, as well as the points made in Section 3.2 regarding the quantification of risk margins, the actuary's task would be made more difficult, because:

(a) The process will be time consuming and will probably not be practical within the normal Lloyd's reporting cycle (although this could be overcome by requiring the work to be done during the second or third quarter of each year, with minimal updating needed as at the valuation date for the SAO).
(b) The reserving complexities mentioned in Section 1 will make the process more difficult than might be the case, for example, with an insurance company writing large volumes of a small number of lines of business on a 100% direct basis. In fact, these complexities should mean that the actuary can add more value by developing such a model. The model should enable the relationship between risk and return to be explored; the complexities often lead to greater uncertainty, which should be allowed for in the quantification of risk, and should be compensated for by higher returns. In this way, managing agents will become better informed about the business that they are writing on behalf of Lloyd's members.

3.4.2 A first step in constructing such a model will usually be to identify and then interrogate the distribution of possible claims outcomes to which the RITC relates. This may be achieved by the use of simulation models that build up distributions of possible future claim outcomes in a stochastic manner. In a general insurance context, these are normally referred to as dynamic financial analysis (DFA) models. Several papers have been written

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on DFA (e.g. Cumberworth *et al*., 1999), but none that specifically focus on its application to Lloyd's or to the RITC process.

3.4.3 DFA models can be relatively straightforward or can be much more complex, according to the level of sophistication deemed to be necessary. An appropriate model will need to allow for the risk profile of the accepting Lloyd's members and the correlation between their existing business and the business being assumed. In an ideal situation, a model will be able to show the effects of:

— variations in the frequency and severity of future claim and expense payments (by currency);
— variations in the claims payment pattern (and hence reserving risk);
— variations in the recoverability from outwards reinsurance programmes;
— variations in investment returns ; and
— dependency between different asset and liability cash flows.

3.4.4 Once a simulation model of the above type has been established for a given syndicate, the margin required for the uncertainties described above can be defined as the amount in excess of the discounted best estimate required to reduce a defined risk measure to an acceptable level. We consider three such risk measures in this section, but there are, of course, others. In each case we are assuming that the RITC is being transferred to a group of Lloyd's members on the same syndicate.

3.5 *From Models to Margins (1) — Probability of Ultimate Sufficiency*

3.5.1 One approach would be to identify the margin required to ensure that the RITC will ultimately be sufficient with a specified probability. In order to identify this probability, benchmarks might be taken from other situations where risk is transferred.

3.5.2 Benchmarks of the above type might be taken from actuaries' experience of commutation transactions or from approaches used, for example, in Australia, where the identification of risk margins has a longer history in terms of insurers' accounts.

3.6 *From Models to Margins (2) — Expected Return on Notional Capital Employed*

3.6.1 An alternative approach would be to assess the margin required to give the minimum acceptable expected return to accepting Lloyd's members in recompense for the risk assumed. This approach would need to allow for the notional identification of the capital that needs to be held to support the run-off of the business. This would, in turn, need to refer to the risk profile of an average Lloyd's member, recognising that different Lloyd's members have different risk profiles and that the notional capital identified in each case would differ between Lloyd's members.

3.6.2 An alternative way of considering the return on notional capital

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would be to look at the required marginal change in capital of the accepting Lloyd's members, taking into account the capital already held to support their existing business.

3.6.3 In this approach, as for the approach of identifying a probability of ultimate sufficiency, the definition of the acceptable return to accepting members should reflect the reward for taking on additional risk without necessarily including an additional commercial margin for profit. Some form of benchmarking could, perhaps, be used to establish the level of return, taking into account returns available elsewhere in the insurance industry.

3.6.4 Although this approach may have some theoretical appeal, there are some practical difficulties in implementing it in a Lloyd's context.

3.7 *From Models to Margins (3) — Expected Reserve Deficiency*

3.7.1 A further alternative is one which measures the risk exposure via the expected reserve deficiency, rather than just the probability of a particular reserve level being sufficient. This is a similar concept to expected policyholder deficit used in capital setting analyses. In this case, both the frequency and severity of any potential shortfall is implicitly taken into account, rather than just the frequency approach inherent in the previous method.

3.7.2 An acceptable expected loss would then have to be determined. Benchmarks may again be taken from similar sources, as for the probability of ultimate sufficiency calculations.

3.8 *Simplified Approaches to Calculation of Actuarial RITC*

3.8.1 We are aware of a number of simplified approaches which actuaries might try to use in order to derive an actuarial RITC. These might include:

(a) identifying some general conditions when the RITC reserves are, or are not, likely to be broadly equivalent to the actuarial RITC; or
(b) deriving a prudent estimate of the RITC reserves using a deterministic approach, which is then discounted for investment income.

3.8.2 We think, though, that these approaches have some serious limitations. With option (a), aside from establishing what the relevant conditions should be, there will still be a problem in deciding what to do when the above approach suggests that the RITC reserve is materially different from an actuarial RITC.

3.8.3 With option (b), there is the obvious problem of deciding what deterministic approach to use. In addition, this approach may lead to a very wide range of different views amongst actuaries regarding what is prudent and what is not.

3.8.4 Wherever possible, therefore, we believe that the actuarial RITC should make appropriate allowance for risk, using approaches other than these simplified approaches.

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3.9 *Application of Financial Economic Theory to Actuarial RITC*

Another alternative approach might be to make use of financial theory, such as the capital asset pricing model (CAPM). Although these theories were designed to be used in relating market prices of assets to their cash flows, in principle they could also be applied to liability cash flows. It is possible that they could provide a systematic and economically coherent framework for estimating fair value liability cash flows, and we therefore suggest that further research is done by actuaries in this area. Such research would also have application outside the Lloyd's RITC process.

3.10 *SAOs on the RITC*

3.10.1 The use of the actuarial RITC would enable the actuary to provide a formal opinion on the RITC itself. If SAOs were to be provided by actuaries on the RITC, then clearly we would need an appropriate form of words for the opinion element of the SAO. Further work would be needed on the methodology used to derive the actuarial RITC, building upon the brief introduction above, before actuaries would be in a position to provide such opinions. However, one possible form of words for the opinion is as follows:

> "In my opinion, subject to the above comments [and except for the qualifications stated below], the Reinsurance To Close shown above represents a reasonable premium to be paid by the Lloyd's members representing the [closing year of account] to the Lloyd's members representing the [accepting year of account] so as to reinsure the future cost, net of reinsurance recoveries, of the claims and claims handling expenses net of anticipated future premiums in relation to [closing year of account] of Syndicate KLM as at 31 December XXXX."

3.10.2 An alternative wording might be:

> "In my opinion, subject to the above comments [and except for the qualifications stated below], the Reinsurance To Close premium shown above represents a reasonable estimate of the actuarial RITC, as defined above, in relation to Year of Account YYYY for Syndicate KLM as at 31 December XXXX."

3.10.3 In effect, both of these imply that the RITC is reasonably close to (i.e. it is neither too far above nor too far below) the actuary's best estimate of the actuarial RITC. Unlike the existing solvency SAOs, the first of these, and probably also the second, also imply that it is reasonable to close the relevant year of account. The SAOs would need to contain comments regarding variability, etc., similar to those in the existing solvency SAOs.

3.10.4 It is worth noting that the volume of work involved in providing this type of SAO is likely to be greater than that involved in providing the current solvency SAOs. We have obviously only covered the approaches that could be used to derive the actuarial RITC in superficial detail here, and we would welcome readers' comments on our suggested approaches, and further research into this area.

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4. THE 'RITC RESERVES'

4.1 *A Practical Alternative to the 'Actuarial RITC' Sign-Off*

4.1.1 A simple and practical alternative to the type of sign-off referred to in Section 3 would be that, in the 'normal' situation (where the same syndicate is ceding and accepting the RITC), the actuarial opinion would be given on the RITC reserves, rather than on the actuarial RITC. This would be a 'two-sided' reasonableness opinion, so that, unlike the existing solvency opinions, an excessively high reserve would not necessarily allow an unqualified opinion to be provided. It is probably very similar to the sort of informal opinions that actuaries are already giving in relation to RITC. It is worth noting that excessively high RITC reserves would not be consistent with the duty of the managing agent to set the RITC, which should be fair and equitable between the two years of account, nor with the duty of the auditor to opine that the RITC is true and fair.

4.1.2 One possible form of words for the opinion section of an SAO with this type of sign-off would be as follows:

> "In my opinion, subject to the above comments [and except for the qualifications stated below], the Reinsurance To Close premium shown above represents a reasonable estimate of the undiscounted expected future cost, net of reinsurance recoveries, of the claims and claims handling expenses net of anticipated future premiums in relation to Year of Account YYYY for Syndicate KLM as at 31 December XXXX."

4.1.3 An alternative wording might be:

> "In my opinion, subject to the above comments [and except for the qualifications stated below], the RITC reserves, as defined above, make reasonable provision for the unpaid claims and claims handling expenses, net of anticipated future premiums, for which Syndicate XYZ was liable as at 31 December XXXX."

4.1.4 In effect, the first of these implies that the RITC is reasonably close to (i.e. it is neither too far above nor too far below) the actuary's best estimate of the undiscounted reserves. The second also implies this, if the syndicate were to set its RITC equal to the RITC reserves, as defined in ¶2.8.1.

4.1.5 In either case, the SAO should state clearly that it does not comment on the RITC itself (and, as commented on in ¶2.4.14, possibly mention the elements of RITC, such as risk margin and allowance for future investment return, that are specifically excluded from the SAO), and does not comment on whether the underwriting year of account should be closed or not. They would also need to contain comments regarding variability etc., similar to those in the existing solvency SAOs.

4.1.6 In the next section we contrast this type of opinion with that on the actuarial RITC, and refer to a wider type of opinion on the financial condition of a syndicate.

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5. Actuarial Opinions and RITC

5.1 *On what should Actuaries Opine?*

5.1.1 We have put forward two very different alternatives for actuarial opinions in relation to RITC. Unless a statutory role is introduced, it is quite possible for actuaries to be asked to provide opinions that are similar to either approach. In contrasting these two approaches, unless otherwise stated, we do not distinguish between the role being statutory (i.e. compulsory for all general insurance syndicates) or voluntary.

5.1.2 It should be obvious that an opinion on the actuarial RITC provides a more theoretically sound basis for an opinion on the RITC. It is intended to allow for issues such as the risk profile of the accepting Lloyd's members and the impact of discounting, and we believe more accurately follows the Lloyd's rules governing RITC. This is backed up by the references to the treatment of investment income in the *Lloyd's Market Handbook*, referred to in ¶2.3.17. An opinion on the reasonableness of the RITC reserves would not, of course, make any allowance for the risk inherent in the liabilities being transferred. Therefore, in individual cases, and on a voluntary basis, we think that there is a clear advantage in actuaries providing opinions on the actuarial RITC.

5.1.3 As discussed in Section 3, we consider that the actuarial RITC has a number of similarities with the 'fair value' concept put forward in IASC (1999). We had originally concluded that opinions on the actuarial RITC would have a relatively short life and would be of limited relevance to corporate Lloyd's members, and hence had begun to favour opinions on the RITC reserves. However, if the IASC's tentative proposals regarding fair value are carried through, then an actuarial opinion on an equivalent item to the actuarial RITC will be a very effective means of ensuring that this potentially difficult concept is applied as consistently as possible across insurance enterprises (be they Lloyd's syndicates or otherwise).

5.1.4 Hence, we strongly favour actuarial opinions on the actuarial RITC. As mentioned in Section 3, we do believe, however, that further research is needed in relation to the methodology to be used in deriving an actuarial RITC before a statutory role could be introduced. This is entirely consistent with the conclusions of the IASC, who acknowledge, in their issues paper, that more work is needed on the measurement of fair value, particularly with regard to liabilities. Actuaries who are active in the Lloyd's market and who are willing to consider further the concept of an actuarial RITC can, therefore, play a useful role in contributing to the IASC's debate on fair value accounting.

5.1.5 Longer term, when the majority of Lloyd's syndicates will, in effect, be very similar to 'normal' insurance companies, then financial condition opinions, rather than simply reserve opinions, would add more value than actuarial opinions on the reserves (whether they are on a fair

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value basis or not). This is because we believe that they provide a more complete opinion on the overall insurance enterprise, taking into account both the asset and liability related risks to which that enterprise is exposed. Many of the issues referred to in Section 3, in relation to the actuarial RITC, need to be considered when giving an opinion on the financial condition of an insurance entity. Financial condition reporting is considered further in Section 8.

5.1.6 In the interim, pending:

— further work on the methodology to be used in calculating an actuarial RITC, including consideration of the quantification of risk margins;
— further discussion of the concept of fair value accounting, particularly with regard to its application to Lloyd's; and/or
— further work in relation to financial condition reporting (see Section 8);

a simple and practical interim approach would be for actuaries to provide 'two-sided' opinions on the RITC reserves (i.e. the undiscounted reserves).

5.1.7 This would have the advantage that:

— we believe that RITC is calculated as the undiscounted reserves for the relevant underwriting years by most syndicates anyway (except, perhaps, where the RITC is being paid to an entity other than a year of account of the same syndicate);
— it would provide a link with the existing solvency SAOs which are also in relation to the undiscounted reserves (but see Section 5.3 for some complications of this);
— it provides a two-sided reasonableness opinion that is missing from the current statutory solvency role;
— there would be minimal additional cost imposed on the market, as much of the work required is already done by the actuary in relation to the statutory solvency opinions; and
— it is already done in a number of cases.

5.1.8 An additional point concerning the nature of the actuarial opinion relates to whether the opinion wordings suggested in Sections 3 and 4 need to change if the RITC is not being transferred to another year of account of the same syndicate. Our views on this are:

— *For the actuarial RITC opinions*, if the actuary were effectively acting for both parties to the transaction (e.g. as might be the case when the RITC is being transferred to a different syndicate in the same managing agency), then the opinion wording could remain unchanged. If he/she were not acting for both parties, then the opinion wording would obviously need to be changed to reflect this. In both cases, the definition of 'reasonable' in the opinion wording might need to be clarified.
— *For the RITC reserve opinions*, the existing wordings could still be used, except that the definition of 'reasonable' might need to be clarified.

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5.2 *Stakeholder Perspectives*

5.2.1 The current statutory actuarial role in relation to solvency has evolved over time, but its purpose has always been to provide increased security from the policyholders' perspective. Consideration of other stakeholders, such as Lloyd's members, is not part of the current role.

5.2.2 If actuarial opinions in either of the two forms outlined above, or on the financial condition of a Lloyd's 'insurance company', are to add value beyond the existing solvency opinions, then they should preferably enable the perspective of other stakeholders to be considered. The stakeholders who have an interest in the reserves held by syndicates, and in the wider financial condition of a Lloyd's syndicate, include:

Customers	Policyholders
Investors/Lloyd's members	Individual Lloyd's members Corporate Lloyd's members Shareholders in corporate Lloyd's members Reinsurers Investment analysts Members' agents
Regulators	The FSA Non-U.K. insurance and financial regulators The Stock Exchange The Corporation of Lloyd's The Government Actuary's Department
Others	Rating agencies The Inland Revenue Auditors The Faculty and Institute of Actuaries Brokers

5.2.3 The prime requirements of the main stakeholders can be summarised as follows:

— *Customers* will want 'fair' pricing and claim agreement, efficient service and high security.
— *Investors* will want high returns (capital and/or income) at acceptable levels of risk, reported on a 'fair' basis.
— *Regulators* will focus mainly on policyholder security, but will also be interested in 'fairness' or 'equity' between Lloyd's members. In some territories (e.g. U.S.A.), the regulator also seeks to ensure 'fairness' to consumers by regulating insurers' prices.
— *Inland Revenue* will want reserves that affect tax calculations to be calculated on a 'fair' basis consistent with the relevant taxation legislation.

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5.2.4 The existing statutory actuarial solvency opinions at Lloyd's clearly are 'one-sided', and therefore address only the security requirements of these different stakeholders. They certainly do not reflect any concept of fairness referred to in several places above. This is not surprising, since they were designed to meet the requirements of the particular stakeholder who asked for the solvency opinions to be introduced in the first place (effectively the DTI at the time).

5.2.5 Arguably, a two-sided reasonableness opinion, on either the actuarial RITC or the RITC reserves, would better serve the collective interest of the various stakeholders in the RITC process. This leads one to consider whether the basis of the solvency opinions should be amended to be of this form, and we think that this should be explored with the interested parties, with the overall objective of developing single purpose financial statements for tax, regulatory and syndicate/company accounts purposes. In the absence of this amendment, actuaries would need to provide two-sided reasonableness opinions, as well as meeting the current statutory role of a one-sided opinion. Sections 5.3 and 5.4 consider how these two types of opinion would inter-relate.

5.2.6 The advantages and disadvantages of the three types of actuarial opinion (on RITC reserves, actuarial RITC and financial condition), when viewed from the perspective of the different stakeholders, are summarised in Appendix 1. On balance, we feel that, for each type of opinion, the advantages outweigh the disadvantages.

5.3 *Implications of Actuarial Opinions in relation to the RITC Reserves*

5.3.1 If an actuary provides an opinion on the RITC reserves, as defined in ¶2.8.1, then the overall level of RITCs in the market could remain the same, reduce or increase. Our view is that, if anything, they are likely to reduce slightly, compared to what they would be if there were no actuarial opinions in relation to RITC. This is because, although there are some cases where RITC is less than the solvency reserves:

— the RITC, for most syndicates, is set equal to the solvency reserves; and
— the actuarial opinion on the solvency reserves is a 'one-sided' opinion, that is designed to prevent the reserves from being too low, but does not prevent them from being too high.

5.3.2 If we concentrate, for the moment, on the majority of syndicates that currently set their RITC equal to their solvency reserves, then it can be seen that these syndicates already have an implicit actuarial opinion that the reserves underlying the RITC are at least as large as a best estimate. The introduction of an RITC opinion would not change this, but would be designed to ensure that the RITC is also not materially higher than this best estimate. Therefore, amongst those syndicates that currently set their RITC equal to the solvency reserves, the only ones that an actuarial opinion on the

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reserves underlying the RITC would affect would be those who typically hold reserves that are materially higher than the actuary's best estimate. In these cases, the effect of an opinion on the RITC reserves would be to reduce the RITC to a level that was sufficiently close to the best estimate to enable the actuary to provide the two-sided opinion. So, for those syndicates that continue to set their RITC equal to the solvency reserves, unless the solvency opinions could be changed to be two-sided, the effect of providing an actuarial opinion on the RITC reserves would be to ensure that the RITC was above, but not materially above, the actuary's best estimate. We do not have any data available that would indicate the extent of reserving at levels that are materially higher than the best estimate, and hence the materiality of the effect on reserving levels of providing these RITC opinions is unclear. The effect also depends on the prospective reserving stance taken by Lloyd's syndicates.

5.3.3 For the small minority of syndicates that do not set their RITC equal to their solvency reserves, the RITC can only be less than the solvency reserves. For these syndicates, the impact of an opinion on the RITC reserves would, therefore, depend on how the existing RITC compares to the actuary's best estimate. In theory, the solvency reserves could still remain above the RITC, possibly by a material amount, but the accepting year would need to fund the implied solvency deficit.

5.3.4 The wording of the opinions given in ¶4.1.2 could, perhaps, be amended in the cases where the RITC reserves were definitely greater than the actuary's best estimate, but not materially so. This would distinguish it from the current generalised wording, which implies 'reasonably close to the actuary's best estimate' as opposed to the more restrictive 'greater than, but reasonably close to the actuary's best estimate'.

5.3.5 If large numbers of syndicates decided to seek voluntary opinions on the RITC reserves, or if a statutory role were introduced, then syndicates' results might become slightly more volatile, and hence there could be a marginal effect on the ability of syndicates to smooth underwriting results. However, this would be in line with the IASC's concept of fair value accounting, and, in any case, could be catered for by the use of 'performance reporting' (that is, by dividing reported profit into a smoothed operating profit and a variable component, caused by use of fair values).

5.4 *Implications of Actuarial Opinions in relation to the Actuarial RITC*

The issues raised in Section 5.3 would also apply here, but, in addition, the use of an actuarial RITC would also have an effect. Hence, factors such as the size of the risk margin and the offset for investment income would be relevant. Arguably, in the current relatively low interest rate environment, an allowance for risk margin could exceed the discount for investment income, and hence the level of future RITCs could be higher if an actuarial RITC opinion were utilised.

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5.5 *Professional Liability Issues*

5.5.1 Additional professional liability exposures may arise from the provision of opinions on either the actuarial RITC or the RITC reserves. The potential additional issues introduced by these opinions over and above the existing statutory solvency opinions can be summarised as 'fairness/two-sided' and 'commerciality'. The first of these arises because both types of opinion effectively imply a degree of fairness in relation to the reserves, which is absent from the existing statutory 'one-sided' opinion. Hence, the actuary is effectively acting for both the accepting and ceding groups of Lloyd's members. With the existing solvency opinions the actuary is acting only for the managing agent, who, by obtaining a solvency opinion, is simply complying with *Lloyd's Valuation of Liabilities Rules*. The second issue, commerciality, arises only in relation to the actuarial RITC, and does so because the RITC represents a commercial transaction between the ceding and accepting Lloyd's members. Neither of these two issues, however, represents entirely new areas of professional liability exposures for actuaries. For example, with some commutations, actuaries provide an opinion that takes into account both sides of the transaction, although we believe that this is relatively rare. More commonly, actuaries provide opinions that are used to assist companies making commercial decisions, such as in relation to the purchase and sale of companies.

5.5.2 An additional issue, closely related to these two issues, concerns 'closure' of years of account. The work needed for the existing statutory opinions usually, but not always, includes the actuary making an independent estimate of the liabilities. However, this does not necessarily imply that the year of account should be closed, and hence the actuary is not providing an opinion on whether the year of account should close or not. An unqualified opinion in relation to the actuarial RITC, along the lines of the wording given in ¶3.10.1, would, however, imply that it is reasonable to close the relevant year of account. This, therefore, might represent an additional area of professional liability exposure for the actuary. An unqualified opinion in relation to the RITC reserves, along the lines of the suggested wordings in ¶¶4.1.2 and 4.1.3, would not, however, necessarily imply that the year of account should be closed.

5.5.3 Financial condition opinions could clearly introduce additional professional liability exposures. However, until the precise nature of these opinions is defined, we cannot comment on what these exposures might be.

5.5.4 It would not be appropriate for us to provide advice in this paper with regard to what action, if any, actuaries should take in relation to any additional professional liability exposures discussed above. All we can say is that actuaries should not be put off by the additional exposures that might arise, as this is an inevitable consequence of an expanding role; they should, of course, obtain legal advice where necessary.

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5.6 *Overlap with Auditors*

5.6.1 The audit report in the syndicate accounts states that "the accounts are prepared in accordance with Lloyd's Syndicate Accounting Rules".

5.6.2 In arriving at a true and fair opinion on the closed year, the auditors will wish to establish that the result is unlikely to be materially misstated. Hence, given that one of the most significant figures in the underwriting account is the RITC, they will be ensuring that this is a reasonable assessment of the liabilities attaching to the year of account closing. It does not imply that they are opining on the RITC itself.

5.6.3 It is likely that auditors would rely quite heavily on opinions provided by actuaries in relation to RITC. Currently, a reliance on an expert opinion would not reduce the responsibility of the auditors in performing their work. However, it does potentially place the actuary between the auditor and any aggrieved stakeholders.

5.6.4 In connection with the auditors' responsibility, it is interesting to note that the Auditing Practices Board Practice Note 20, page 99, Section 53, states:

> "The Lloyd's Valuation of Liabilities Rules 1998 allow the syndicate auditor to rely upon the Statement of Actuarial Opinion given in respect of general business solvency technical provisions. In light of this, the auditor's duty is restricted to ensuring that this statement is properly reflected in the return."

5.6.5 Based on the above, we do not believe that the provision of opinions by actuaries on either the actuarial RITC or the RITC reserves will cause an overlap with auditors. At present, auditors tend to seek some information from actuaries in relation to the reserving work that they have done, and usually want more than just the signed SAO. However, in our experience, these requirements vary between auditors, and it is likely, therefore, that there is a wide range of practices regarding exactly what is provided by actuaries to auditors. In addition, some auditors are thought to believe that actuaries already sign-off on RITC. Although some may do so on a voluntary basis, there is obviously no statutory role at present.

5.6.6 If the provision of either type of opinion in relation to RITC can meet the auditors' requirements, then this should help to remove any possible differences in practice, and hence we believe that auditors would welcome such opinions.

6. Taxation Issues

6.1 *Taxation Rules in relation to RITC*

Taxation rules in relation to the RITC premium differ from those that pertain to the U.K. company market. This is because general tax law relating

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to reserves and provisions does not apply to what is, in fact and law, a reinsurance transaction. Instead, Section 177 of the Finance Act 1993 (whose origins date back to 1987) relates to RITC, and is reproduced below.

"(1) This section applies where
(a) in accordance with the rules or practice of Lloyd's and in consideration of the payment of a premium, one member agrees with another to meet liabilities arising from the latter's underwriting business for an underwriting year so that the accounts of the business for that year may be closed; and
(b) the member by whom the premium is payable is a continuing member, that is, a member not only of the syndicate as a member of which he is liable to pay the premium ("the reinsured syndicate") but also of the syndicate as a member of which the other member is entitled to receive it ("the reinsurer syndicate").
(2) In computing for the purposes of income tax the profits of the continuing member's underwriting business as a member of the reinsured syndicate, the amount of premium shall be deductible as an expense of his only to the extent that it is shown not to exceed a fair and reasonable assessment of the value of the liabilities in respect of which it is payable.
(3) In computing for those purposes the profits of the continuing member's underwriting business as a member of the reinsurer syndicate, those profits shall be reduced by an amount equal to any part of a premium which, by virtue of subsection (2) above, is not deductible as an expense of his as a member of the reinsured syndicate.
(4) The assessment referred to in subsection (2) above shall be taken to be fair and reasonable only if it is arrived at with a view to producing the result that a profit does not accrue to the member to whom the premium is payable but that he does not suffer a loss.
(5) This section also applies in any case where the member to whom the premium is payable is a corporate member within the meaning of Chapter V of Part IV of the Finance Act 1994."

6.2 *Interpretation of the Rules*

6.2.1 We need to focus on subsections (2) and (4). It is important to note that we are focusing here only on continuing members of the syndicates concerned (as made clear by (1) (b)).

6.2.2 Subsection (2) states that an RITC is "deductible as an expense ... only to the extent that it is shown not to exceed a fair and reasonable assessment of the value of the liabilities". This may be taken to mean that:
— any RITC assessment should be made on a basis that can be reproduced consistently; and
— any assumptions underlying the assessment of the RITC should be set, individually and in aggregate, with a view to producing a fair and reasonable result.

6.2.3 It is, however, difficult to be prescriptive in identifying a set of assumptions for setting the RITC, and a range of RITCs will almost certainly be considered to be fair and reasonable. An opinion on the actuarial

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RITC, the RITC reserves, or a financial condition report might help to satisfy the above Inland Revenue requirements.

6.3 *A recent Inland Revenue Dispute*

6.3.1 Subsection (4) states that an RITC "shall be taken to be fair and reasonable only if it is arrived at with a view to producing the result that a profit does not accrue to the member to whom the premium is payable but that he does not suffer a loss''. This subsection (together with subsection (2)) was the main focus of a recent dispute between a Lloyd's syndicate and the Inland Revenue. That case was taken to an independent tax tribunal (the General Commissioners for the purposes of Income Tax) as a test case on 'discounting', on behalf of the Lloyd's market. In this case the Inland Revenue sought to disallow some portion of the RITC claimed as a deduction for tax, because no allowance had been made for the time value of money in calculating the RITC. The Inland Revenue also argued, on facts specific to that syndicate, that a tax disallowance was also due because the underwriter had included a margin for caution above the actuarial best estimate.

6.3.2 The case was heard by the General Commissioners. During the course of the hearing the Inland Revenue dropped the claim that the underwriter had included a margin for caution, having been satisfied that it had been shown that the syndicate's approach to establishing RITC was well documented and robust in the light of the requirement in subsection (2) for it to be 'fair and reasonable'. The Inland Revenue was also satisfied that there was no demonstrable evidence to indicate that significant margins had been included for the syndicate in question.

6.3.3 The General Commissioners ruled on the discounting issue in favour of the syndicate and against the Inland Revenue. They found that the proper test of tax deductibility was whether any profit could be said to accrue at the time when the RITC premium was paid, and that this assessment was a matter of underwriting judgement, properly informed by actuarial expertise. The RITC paid, which was based on undiscounted best estimates, was acceptable for tax purposes. The syndicate and the Inland Revenue had until 9 November 1999 to make comments on the draft decision. Both sides then had a further 28 days to comment on the other side's representations.

6.3.4 At the time of writing, the General Commissioners had yet to produce a final version of their decision. This final version will be produced by the General Commissioners as soon as possible, taking account of the submissions made, if they wish. Once it receives the final decision, the Inland Revenue will have 30 days to decide whether to appeal to the High Court. It is hoped that more will be known before this paper is presented at the Institute meeting on 27 March 2000, and if so, an update will be provided at that time.

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7. Possible Future Changes at Lloyd's

7.1 *Introduction*

Most of the earlier sections have assumed that the existing system at Lloyd's continues in its present form. In fact, this is unlikely to be the case. In this section we consider the major structural changes that might be made at Lloyd's in future, and explore the implications for actuarial opinions of such changes.

7.2 *What might Change?*

7.2.1 In time, we may see both the annual venture system and the RITC system being removed, if not for the whole market, then at least for a substantial part of it. The individual Lloyd's members may wish to continue with something akin to the existing system, and a dual approach might emerge which can accommodate both types of Lloyd's members. For dedicated corporate members, the annual venture and RITC system is already largely irrelevant. With 45% of the capital being supplied by such members for the 1999 year of account, a new approach is needed for a substantial part of Lloyd's capital base.

7.2.2 The new approach would not need to involve either an annual venture or an RITC system. There would be no need for individual years of account to be treated separately, as there would, in effect, be only one economic entity for each syndicate, and equity would, thus, not be an issue between years of account. The requirement to delay release of profits for a given period would fall away, and would be replaced by a system where each entity would declare profits and distribute them by way of dividends to shareholders, in exactly the same way as non-Lloyd's insurance companies already do.

7.2.3 A large proportion of the capital supporting Lloyd's originates from U.S. companies, and for this capital there is an additional requirement to produce figures on a U.S. GAAP basis. The pressure to keep accounting and reporting costs down to a minimum would be a strong argument for the Lloyd's market to move to an accident year basis. In addition, many non-Lloyd's insurers report on an accident year basis, and such a move would make comparisons easier, and thus, probably, would be supported by regulators and analysts.

7.2.4 Clearly, a lot of detailed thinking needs to be done before Lloyd's can implement the above changes, and we assume that the Lloyd's Act would need amending. However, we believe that, at some point in the future, probably within five years, the annual venture and RITC system will be dispensed with, at least for some categories of Lloyd's members. In effect, the Lloyd's market will include a number of insurance companies, probably reporting on an accident year basis.

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7.3 *The Effect on Existing Statutory Actuarial Opinions*

7.3.1 If we assume that the above changes take place, at least for some categories of Lloyd's members, then the existing solvency opinions will need to be amended. In particular, there will no longer be a need to obtain separate opinions for each economic entity. The current requirement to have an opinion for each of the open years forces the managing agent to give some consideration to the outcome of these years at an earlier stage than otherwise might be the case. It could be argued that this, in itself, is a good discipline, in that it encourages managing agents to take early corrective action in times of poor underwriting results. This is not a sufficient reason, though, to maintain the current requirement for managing agents to obtain a separate opinion on the reserves for each open year of account, because more detailed pricing work is needed to target those areas where rating action is needed.

7.3.2 Hence, the solvency opinions could simply relate to the reserves in aggregate across all years of account, rather than to individual years of account. This would not remove the need to continue to monitor reserves by relevant cohort (e.g. underwriting year or accident year), as this would still be very important from a management control and regulatory viewpoint.

7.3.3 There might also be the need to change to an accident year basis, which obviously places additional data requirements on the syndicates. These requirements could be very time consuming, and quite difficult for some syndicates.

7.3.4 We also believe that there would be an argument for amending the solvency basis to be a 'reasonableness' or 'two-sided' basis, rather than the 'one-sided' basis, as at present. This is because the new Lloyd's syndicates would be no different from existing U.K. insurance companies. These companies need to compete in an increasingly global insurance marketplace, and this marketplace includes territories such as the U.S.A., where the requirements for actuarial opinions are on a reasonableness basis.

7.4 *The Effect on Opinions on the Actuarial RITC and RITC Reserves*

7.4.1 Again, if we assume that these changes take place, then the actuarial RITC and RITC reserve opinions, discussed in Sections 3 to 5, would need to be amended. Either opinion could, in theory, still be used, but both would need to be changed to refer to the "reserves shown in the accounts of Syndicate XYZ as at..." rather than the RITC for a particular year of account.

7.4.2 The concept of an actuarial RITC would still apply, but would relate to the reserves across all years combined, and would be on an accident year basis. Under the IASC proposals, the unexpired risk reserve is also on a fair value basis. Presumably any actuarial opinion would also cover unexpired risks. In line with our conclusions of Section 5, if reserve opinions were introduced, rather than financial condition opinions, then our

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preference would be for them to follow the actuarial RITC approach rather than the RITC reserves approach. This type of opinion could also form the 'two-sided' opinion referred to in ¶7.3.4, and it would then better serve the collective interests of the various stakeholders in a new style Lloyd's insurance company. We would support further actuarial analysis on the actuarial RITC approach being done as soon as possible.

7.5 *The Effect on Financial Condition Opinions*

If the changes referred to above were to come into effect, then, as concluded in Section 5, opinions on the financial condition of the new Lloyd's insurance companies would add more value than actuarial opinions on the reserves alone. The changes would mean that such opinions would become feasible, whereas, for many existing Lloyd's syndicates, their complex structures make such opinions very difficult to implement. We would envisage that these opinions would include consideration of reserves on a basis equivalent to the actuarial RITC, and hence the additional analysis, referred to in ¶7.4.2, would be of relevance to financial condition opinions.

8. Related Issues Concerning other Actuarial Roles in General Insurance

8.1 *Introduction*

Although this paper focuses on Lloyd's, our view is that many of the principles set out here can be applied, with varying degrees of adaptation, to situations other than RITC at Lloyd's. This would be less so if the changes referred to in Section 7 were not taking place. These changes mean that, at least from an accounting and actuarial perspective, if not necessarily from a marketing perspective, Lloyd's syndicates are becoming more like 'normal' insurance companies.

8.2 *Non-Lloyd's Reserving Applications*

8.2.1 The RITC reserves clearly translate directly to non-Lloyd's situations, since they simply represent the undiscounted reserves (or 'technical provisions', as they are referred to in the U.K. company market). Except for funded business, the reserve opinions would, however, obviously relate to all years combined, rather than just the closing years, and may be on an accident year basis (but might also include consideration of the unexpired risk reserve).

8.2.2 The actuarial RITC, described in Section 3, essentially involves calculating a best estimate figure (allowing for investment income), and then taking account of the distribution around this best estimate. This can obviously be applied directly to any reserving situation. In particular, it can be applied to any situation where there is a commercial transaction involving

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risk transfer, as this would normally have a premium associated with the uncertainty. In addition, if our interpretation of fair value accounting, outlined in Section 3, is correct, then the actuarial RITC approach will be directly relevant to the establishment of fair value general insurance technical provisions.

8.2.3 A significant part of actuaries' work in general insurance outside of Lloyd's involves giving reserve opinions. These include formal (though not statutory) opinions that are published in companies' reports and accounts and less public opinions that appear in confidential actuarial reports provided to management. The use of either an actuarial RITC basis or an RITC reserve basis would be equally relevant to these situations.

8.2.4 Reserving work in situations such as mergers and acquisitions (M&A), commutations and portfolio transfers usually involves a transfer of risk between two parties. Consequently, the concept of actuarial RITC has direct relevance here, although the degree of analysis of the distribution of outcomes (and hence quantification of risk margin) varies according to the importance of the transaction to the entities concerned. In practice, of course, there may not be time, particularly in M&A situations, to carry out the necessary detailed work in order to quantify the risk margin other than very approximately. In addition, in most of these situations the actuary is acting for one party to the transaction rather than for both, unlike the RITC situation. Hence, unless specifically asked to do so, he or she is not seeking to establish equity between the two parties, but rather is only taking into account the risk considerations of the party for whom he or she is acting. This does not alter the overall approach that the actuary is adopting, but simply affects the quantification of the risk margins. Therefore, the actuarial RITC is still a valid concept in these situations.

8.3 *Statutory Actuarial Role in the U.K. Company Market*

With regard to the requirement for statutory actuarial opinions in relation to general insurance companies, Lloyd's is ahead of the company market in the U.K., since, at the time of writing, there are no statutory actuarial opinions required in relation to insurance companies operating outside Lloyd's. With the increased use of corporate capital at Lloyd's, much of which is provided by insurance or reinsurance organisations, companies operating within Lloyd's are becoming structurally similar to conventional insurance companies. One wonders, therefore, how long this anomaly of different actuarial requirements between Lloyd's and non-Lloyd's companies can continue. If this anomaly remains, then, at least in theory, it is possible that a form of 'market arbitrage' might emerge, whereby companies who do not wish their reserves to be subject to the scrutiny of an actuary would not choose Lloyd's.

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8.4 *Contrasting Lloyd's RITC Process with other Situations*

8.4.1 In theory, estimation of the RITC would normally include consideration of the risk associated only with the business written by the syndicate to which the RITC relates. As such, if the business mix remains reasonably stable, the risk profile of the 'seller' and 'buyer' may be regarded as being very similar. For a large number of the alternative situations, the buyer and seller may, however, have significantly different risk profiles. Not only does this make the calculation of perceived risk different, but it may also enable a transaction to occur to the benefit of all parties concerned, including allowance for commercial profit margins. In the case of RITC, our interpretation of the Lloyd's rules (discussed in Section 2) is that the duties imposed on managing agents are such that the willing buyer/willing seller principle will apply to Lloyd's RITC.

8.4.2 When estimating an RITC, it is desirable to establish a consistent treatment over time of the risk element of the RITC premium. In other situations, such as a stand-alone commercial transaction, this obviously need not be the case as, by definition, it is a one-off event, and the amount at which the transaction occurs may be influenced by prevailing market conditions.

8.4.3 For an increasing number of Lloyd's syndicates, the same cohort of Lloyd's members provides the capital for successive years of account. In this case, the RITC process becomes solely a method of profit recognition rather than risk transfer. In these cases, the Lloyd's syndicate is closer to a 'normal' insurance company, and hence the consideration of financial condition becomes more relevant, rather than the more traditional view of RITC being a form of portfolio transfer.

8.5 *Financial Condition Reporting*

8.5.1 This involves expanding the professional role from simply reporting on the adequacy of the technical provisions to consideration of both the asset and liability risk to which an insurance company (Lloyd's or otherwise) is exposed, and includes quantification of the range of uncertainty in these risk elements. It also embodies the idea of projecting forward the assets and liabilities to assess the financial condition of the company in the future. The case for introducing Appointed Actuaries in general insurance in the U.K., with responsibility for reporting on the financial condition of insurance companies, has already been put in a position paper prepared by the General Insurance Board, so we are not going to repeat that case here (see General Insurance Board, 1998).

8.5.2 We would comment, though, that our collective experience, drawn from consultants, actuaries employed by managing agents, and actuaries employed by the Corporation of Lloyd's, has led us to conclude that financial condition reporting would be of genuine use to the market, as long as it can be provided at a reasonable cost. However, we do not feel that it would be

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fair to impose this requirement on Lloyd's in isolation, particularly since Lloyd's is becoming more like the rest of the insurance market anyway. If it were introduced at Lloyd's at some point in the future, then we think that it would be reasonable to remove the 'greater than best estimate' solvency requirement for the reserves, and replace it with a two-sided 'reasonableness' opinion on the financial condition. In addition, the existing asset rules at Lloyd's, which impose restrictions, for example, on the way in which the premium trust funds can be invested, might be relaxed if financial condition reporting were introduced.

8.5.3 In order to provide a professional opinion on the financial condition of an insurer, it is likely to be necessary for an actuary to construct a DFA model, along the lines of that referred to in Section 3, when discussing the actuarial RITC. We understand that the General Insurance Board of the Faculty and Institute of Actuaries has established a working party to consider financial condition reporting in detail. We look forward to this paper, and, in particular, to its application to companies operating in the Lloyd's market. The reserving complexities that exist at Lloyd's and in the London Market (referred to in Section 1) will need to be considered if this paper is to be of benefit to actuaries who are considering financial condition reporting at Lloyd's.

8.5.4 The position paper on financial condition reporting published by the Faculty and Institute of Actuaries suggests that a possible initial step towards full financial condition reporting might be for the actuary to opine only on the technical provisions of an insurance operation. At a later date, this could be extended to full financial condition reporting. For Lloyd's, the initial step is, in some senses, already fulfilled; for companies it is not. For both, we would support further work being carried out with a view to establishing whether financial condition reporting could be introduced at a cost that is acceptable to the insurance industry. We anticipate that the basis for the estimation of liabilities under such financial condition reporting would be 'fair value', as discussed in Section 3.

9. Conclusions

9.1 This section provides a summary of the views that we have expressed in this paper.

9.2 *Reserving at Lloyd's*

The process of reserving at Lloyd's can be improved by a number of initiatives and research. We have made some suggestions in Section 1.4.

9.3 *Current RITC System at Lloyd's*

Clearer guidance is needed on the components of RITC and the basis for

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their calculation. We would suggest that a single document be created dealing specifically with RITC.

9.4 *Actuarial Opinions in relation to RITC*

The actuarial RITC concept is our preferred approach to the estimation of RITC. This is because it includes consideration of risk, allows appropriately for discounting, and is consistent with the IASC's definition of 'fair value' of insurance liabilities. Actuarial opinions in relation to the RITC itself (statutory or otherwise), as opposed to opinions on the reserves underlying the RITC, should only be provided on the basis of the actuarial RITC.

9.5 *Statutory Opinions in relation to RITC*

Before these can be considered, further research is needed with regard to the actuarial RITC. We encourage actuaries to explore the use of DFA in a Lloyd's context, and to estimate the actuarial RITC. Suggested wordings for SAOs are given in Section 3.

9.6 *RITC Reserves*

Prior to the use of the actuarial RITC, we suggest use of the 'RITC reserves' in actuarial opinions in relation to RITC, and provide suggested wordings for SAOs in Section 4.

9.7 *Reasonableness Opinions*

Opinions in relation to the actuarial RITC or the RITC reserves should be two-sided reasonableness opinions. This would be in the collective interest of a larger proportion of the stakeholders in Lloyd's syndicates than the existing statutory opinions, which are on a 'greater than best estimate' basis.

9.8 *Existing Statutory Actuarial Role at Lloyd's*

This is of benefit to the market, but consideration should be given to amending the basis to two-sided reasonableness. This would help achieve harmonisation of fiscal, company and regulatory reporting, which is in the public interest.

9.9 *Changes at Lloyd's*

Recent and likely future changes at Lloyd's mean that many companies operating at Lloyd's are very similar to 'normal' U.K. insurance companies. The annual venture and RITC system are of decreasing relevance to a large proportion of capital provided by Lloyd's members, and a new system needs to be considered.

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9.10 *Financial Condition Reporting*

Longer term, this type of actuarial reporting is of greater benefit to both Lloyd's and non-Lloyd's companies than just reporting on reserves. Use of fair value accounting and of DFA methods should be an integral part of the approach used for financial condition reporting.

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APPENDIX 1

STAKEHOLDER PERSPECTIVES

Table 1. Prime concerns of stakeholders and advantages of actuarial opinions for different stakeholders

Stakeholder	Prime concerns	Advantages of opinions on 1. RITC reserves	Advantages of opinions on 2. actuarial RITC	Advantages of opinions on 3. financial condition
Customers	Efficiency of processing, 'fair' pricing, good service and high security	May help stop insurers keeping prices up, but only if applied to all worldwide Lloyd's and non-Lloyd's insurers	As 1, plus enhanced security due to situation being covered where actuarial RITC exceeds undiscounted reserves	Enhanced security over 1 and 2, as opinion is on overall enterprise, not just reserves
Investors	High returns at acceptable levels of risk, reported on a 'fair' basis	Helps to ensure a fairer allocation of profits as reduces scope of syndicates to book excessively high reserves; possibly some short-term gains if these reserves are released; better informed investors	As 1, with enhanced fairness; close to IASC's concept of fair value accounting	As 1, but with additional benefit that all key sources of risk to investor are subject to independent scrutiny
Regulators	Policyholder security, and 'fairness' or 'equity' between Lloyd's members	As investors (without short term gains!) and customers	As investors and customers	As investors and customers
Inland Revenue	Tax deduction for RITC premiums derived in accordance with tax legislation	May reduce their workload on scrutinising consistency of RITC calculation with IR rules, as subject to independent opinion; if reserves are released, then tax revenues may be brought forward	As 1	As 1
Other	Various	Makes it easier for managing agents to demonstrate that they are complying with Lloyd's guidelines on reserving; auditors would have greater support for their audit work in relation to RITC	As 1	As 1, except that overlap with audit function would need consideration

Notes:
1. Solvency opinions are assumed to remain — and hence the benefits are the additional ones that apply as a result of introducing the additional opinions of types 1, 2 & 3.
2. Financial condition opinions are assumed to include consideration of reserves on the actuarial RITC basis (or fair value basis).

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Table 2. Disadvantages of actuarial opinions to different stakeholders

Stakeholder	Disadvantages of opinions on 1. RITC reserves	Disadvantages of opinions on 2. actuarial RITC	Disadvantages of opinions on 3. financial condition
Customers	Possibly very slightly lower overall level of reserves; any increase in volatility might have slight increase in risk that individual syndicate cannot meet its obligations	None, except possibly very marginal increase in premiums due to additional costs	None, except possibly very marginal increase in premiums due to higher costs
Investors	Published results possibly more volatile	As 1 plus additional work might increase costs slightly	As 2
Regulators	As customers	As 1	As 1, without any increase in risk of syndicate meeting its obligations, as consideration of wider issues should more than compensate for this
Inland Revenue	None, except may find it more difficult to challenge tax deductions claimed for RITC	As 1	As 1
Others	None	None	None

APPENDIX 2

EXTRACTS FROM VARIOUS LLOYD'S DOCUMENTS THAT REFER TO RITC

This appendix contains extracts from various Lloyd's documents that are relevant to the estimation of RITC. Only those extracts that are not already included in Section 2.3 of the paper are included here.

A.2.1 *Core Principles Byelaw*

See Section 2.3 for discussion of this document.

A.2.2 *Agency Agreements Byelaw*

A.2.2.1 Schedule 3, clause 3f, includes the words: "An Agent shall ... determine the premium for, and effect, the reinsurance to close for the Managed Syndicate in respect of each year of account''.

A.2.2.2 Schedule 3, clause 5, includes the words: "The Name hereby authorises the Agent on his behalf ... (without limitation) the power ... (d) on behalf of the members of the Managed Syndicate for a year of account ... and on behalf of the members of the Managed Syndicate for the next succeeding or any later year of account ... to effect in accordance with clause 9 a contract of reinsurance to close ... and to debit the reinsured members and credit the reinsuring members with such reinsurance premium in respect of the reinsurance to close as the Agent, subject to any requirements of the Council, thinks fair''.

A.2.3 *Syndicate Accounting Byelaw*

A.2.3.1 Part C, clause 10(1), includes the words: "Every underwriting account prepared in respect of a closed year of account under paragraph 8(2)(a) shall give a true and fair view of the profit or loss for the year of account of the underwriting member or members for whom it is prepared''.

A.2.3.2 Clause 10(7) includes the words: "Where a managing agent preparing an annual report departs under sub paragraph (5) or (6) from any principal or requirement specified in the Lloyd's syndicate accounting rules, particulars of the departure, the reasons for it and its effect shall be fully stated in the annual report''.

A.2.3.3 Clause 14 (which covers the audit), paragraph (3), includes the words: "The report shall state whether in the opinion of the syndicate auditor ... in the case of any annual report which includes an underwriting account in respect of a closed year of account, whether a true and fair view is given of the profit and loss for that year of account of the underwriting member or members for whom it has been prepared''.

A.2.3.4 Schedule 3, part C, paragraph 1, includes the words: "Items which affect more than one year of account shall be accounted for so as to

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ensure a treatment which is equitable as between the members of the syndicate affected; and in particular the amount charged by way of premium in respect of reinsurance to close shall, where the reinsuring members and the reinsured members are members of the same syndicate for different years of account, be equitable as between them, having regard to the nature and amount of the liabilities reinsured''.

A.2.4 *The Code for Managing Agents: Management of Reserving Risk*

A.2.4.1 Paragraph 2.2: "Methodology: The managing agent needs to be satisfied as to the methodology and data used and assumptions made in relation to the reserve setting process across all its managed syndicates, and is further responsible for ensuring that a consistent high level approach is adopted from one year to the next and between syndicates, except where change can be justified according to circumstances or on the grounds of refinement''.

A.2.4.2 Paragraph 3.2: "The board of the managing agent has the ultimate responsibility for the reserving''.

A.2.4.3 Paragraph 3.18: "Managing agents should maintain appropriate controls and procedures to ensure that reserves for claims outstanding are sufficient to cover any reasonably foreseeable liabilities''.

A.2.4.4 Paragraph 3.20: "A key aspect of the reserving process is to track the performance of reserves against actual outcomes so as to correct any deficiencies. Accordingly, the following controls should be in place:

— the accuracy of past RITC and other reserves should be evaluated on at least a quarterly basis and every effort made to isolate the reasons for any discrepancies; ...
— any material surplus or deficiency arising during the year attributable to previous year reserving should be explained in the Underwriter's Report, as required by the Syndicate Accounting Byelaw; and ... ''.

A.2.4.5 Paragraph 4.2: "The objective of a claims reserve is to recognise the extent of future claims liabilities which are expected to arise, in relation to business already contracted, at a single point in time, in order to present a best estimate of a syndicate's solvency/profitability position''.

A.2.4.6 Paragraph 4.4: "The level of claims reserve should be assessed having regard to the range of uncertainty as to the eventual outcome for each class/category of business''.

A.2.4.7 Paragraph 5.1: "Lloyd's regulations currently impose two separate requirements in relation to the reserve figure. There is the requirement, set out in the Code on Managing Underwriting Risk, for an independent review of RITC and open year reserves to be carried out by a person with the appropriate skills and experience, and there is a requirement in the Valuation of Liabilities Rules to obtain an actuarial opinion on the adequacy of the reserve determined for solvency purposes. It may be sensible

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for the managing agent to arrange for these two reviews to be carried out concurrently by the reporting actuary ... ".

A.2.4.8 Paragraph 5.6: "The managing agent may conclude that, in view of the board having an active role in the reserve setting process, this independent review is already implicit in their procedures, in which case, their conclusions should be documented. Where there is no other suitable independent person to carry out this function, the managing agent may conclude that it is sufficient to rely on the work of the reporting actuary. If this is the case, however, the managing agent should ensure that the scope of the actuary's review is sufficiently wide to cover the matters considered above".

A.2.5 *The Code for Managing Agents: Managing Underwriting Risk*

See Section 2.3 for discussion of this document.

A.2.6 *Lloyd's Market Handbook*

See Section 2.3 for discussion of this document.

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ABSTRACT OF THE DISCUSSION

Mr J. G. Ross, F.I.A. (introducing the paper)**:** Originally Lloyd's broached the subject of this paper shortly after the first or second round of opinions on the United Kingdom solvency position for syndicates at Lloyd's. The original aims of the paper were to research the issues and to put the profession into a sufficient state of preparedness should Lloyd's decide that it wished to pursue this course. Subsequently Lloyd's has put this on the back burner, in part due to an internal reorganisation. Nevertheless, we decided that many of the issues that we had begun to explore had relevance more widely than simply reinsurance to close (RITC) at Lloyd's. We thought, therefore, that it would make sense for us to continue with the paper.

The second reason to continue with the paper was that a number of actuaries do, in fact, sign pseudo opinions on the RITC — or rather they report on the reserves which underlie the RITC at Lloyd's, so there are actuaries who are doing something similar to an RITC sign-off in practice. Indeed, many people think that we already sign off on the Lloyd's arrangements to close. That is, perhaps, best exemplified by a recently published article which expressly stated that actuaries sign off on the RITC. The General Insurance Board replied to that article to correct the comments made. Nevertheless, the misconception that we already sign off on the RITC is, perhaps, partly understandable, so again we thought that we had better explore some of the issues.

A third reason arises because we cannot use a U.K. solvency opinion to infer an equitable RITC premium, because the solvency opinion is a one-sided test. In other words, it is possible that a solvency reserve, in some circumstances, might prove to be materially greater than a best estimate. The solvency opinion would not preclude that, and it is difficult to see how such a reserve could, in fact, be the basis for an equitable RITC.

The paper is aimed, first and foremost, at the actuarial profession: actuaries currently at Lloyd's; actuaries new to the Lloyd's market; and actuaries generally concerned with the assessment of true and fair insurance profit and loss. We think, however, that many of the other stakeholders at Lloyd's would also be interested. We hope that the paper sheds a little more light on the RITC process, and, as such, existing and perhaps potential future capital providers would have an interest in the paper. We also discuss, in some detail, some possible future changes in the RITC premium, and, more fundamentally than that, in the annual venture at Lloyd's. Lloyd's itself, and possibly the FSA and other regulators, might also have an interest in the paper.

The paper leaves some topics for future research. The most obvious is that of risk margins. There is a General Insurance Research Organisation (GIRO) Working Party which has taken up this particular subject.

Associated with the subject of risk margins is that of discounting for future investment income, in particular the rate or rates at which to discount. We suggest that this should be a risk-free matched rate, and that sources of uncertainty should be dealt with in the risk margins. So, while these two subjects are inextricably linked, we do not think that one is a *quid pro quo* for the other. In fact, such an approach was endorsed in a December 1999 FASB document on fair values, which concluded that when cash flows are conditional, optional or particularly uncertain, the most appropriate approach to the discount rate is to include only the time value of money in the discount rate.

Another area for future research is, I suspect, that of financial economic theory. In particular, would that help us to provide a practical framework within which to estimate a consistent and fair value of future liabilities and of assets?

Financial condition reporting, including dynamic financial analysis (DFA), is ripe for future research. I should like to stress that such research should include an assessment of the costs as well as of the benefits. I do not think that it has yet been demonstrated that any benefits outweigh the costs of implementing such a regime. We should not overlook the cost or the

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opportunity cost of any new initiatives. I would be loath to take resources away from areas where we, as actuaries, can add value, for example supporting the underwriters on pricing and on planning the business that we are going to write. So, I think that that should be borne in mind when discussions are taking place in regard to opinions, formal or otherwise.

Fair value accounting is another area that we touch on in the paper. The concept of actuarial RITC, which is one that we introduce in the paper, is not a new one, although the phrase that we have used to describe it is new. It is consistent with the International Accounting Standards Committee's definition of fair value accounting for insurance operations.

We refer in the paper to a recent tax dispute between the Inland Revenue and a Lloyd's syndicate. That has been somewhat overtaken by events, and I now give a brief factual update. The Inland Revenue wanted to see the RITC premium discounted to allow for future investment income. The Lloyd's syndicate did not. The General Commissioners upheld the decision of the independent tax tribunal that RITC should not be discounted. The Inland Revenue decided not to appeal against that decision. However, at about the same time, the Chancellor of the Exchequer was announcing, in his Budget, the Government's intention to introduce discounting of claims reserves for insurance operations, including Lloyd's capital providers, for tax purposes. These will appear in early April 2000.

The independence of the signing actuary is something which arose in the discussions between the authors. We did not come to a conclusion, which is one of the reasons why there is no mention of it in the paper. At least one member of the Working Party felt that in-house actuaries are not sufficiently independent to sign or to opine on RITC. Others felt that one's duties to the profession and professional integrity negate such a view.

Mr J. E. O'Neill, F.I.A. (opening the discussion)**:** The paper is timely, following the increase in actuarial involvement at Lloyd's. Mr Ross mentioned that some aspects of the RITC process have been put on the back burner, but, at the same time, we have seen developments on discounting and taxation.

Actuaries and Lloyd's have had a long association, but it is only over the last three years or so that we have had anything close to a statutory role, aimed almost exclusively at the solvency position. Actuarial work is not extended to the RITC process, except in some special circumstances. This is despite the widespread assumption that we do more in this particular area. Solvency is different from the RITC, but, as time goes on, it is becoming more difficult for actuaries to separate those two roles: the actuary opining on solvency and the actuary contributing to the RITC process. As the reserving process and the RITC process are subjected to greater analysis and increasing external review, there is more for us to do.

Lloyd's has changed. Just to remind you of some of the major developments, along with reconstruction and renewal, there has been an increase, in fact a near dominance, of corporate capital. This has brought greater encouragement to a particular set of financial disciplines. The regulators have been more active. In Lloyd's, itself, there has been consolidation, both among the managing agencies and also among the syndicates, resulting in a smaller number of larger units. Another area of actuarial involvement is in the introduction of risk-based capital. All of these developments require a formal, if not a better, understanding of just what the risks are at Lloyd's and who bears them. Against this background, it is surprising that the RITC process has not attracted even more attention from actuaries than it has hitherto.

In ¶1.3.2 the authors consider a formal statutory role for the actuary, and the possibility that this might be in place at Lloyd's for future RITC. This is almost incidental in some ways, because, even if such a role does not materialise, we still need to formalise the actuarial involvement in the RITC process and to advise what constitutes best practice in this field. There is a growing expectation from managing agents, their advisers (including their auditors), and also the regulators that we will do more and say more. A major issue is whether, as actuaries, we are going to lead or to follow this development.

As is commonplace at Lloyd's, what you can do depends critically on the quality of the data, and there is a need for us to ensure that we have adequate data for this process. Reinsurance is

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extremely important, and the potential mismatch between the premium payer and the beneficiary of protection purchased on a losses occurring basis. It is not currently a major item for the RITC process while closure is after three years, but it is an issue for the operation of Lloyd's going forward and for RITC if the period to closing were ever made shorter.

The multi-year policy and the practice that Lloyd's has of signing business through into subsequent years is another issue. This may transfer both exposure and premium rate guarantees. These would not necessarily be neutral from a reserving stance.

The risk premium has been covered well in the paper. There is a great interest in just what the risk premium does in terms of graduating the level of confidence that we have in any particular set of results.

Consideration of the assets, including syndicate borrowing and the impact of maintaining trust funds, needs to be added to the consideration of discounting. This involves a broader treatment of the assets in this process.

In Section 2 the authors define the RITC and include some discussion on what is a 'fair' RITC. In the interests of furthering actuarial work, there is a very good case here for saying that both sides, the Names ceding and the Names accepting the premiums, would need actuarial advice, and maybe even a third actuary should adjudicate on the outcome. I am sure that there is more work for us here.

In Section 2.5 the authors cover the issue of why the RITC process has survived so long. It is important for us to unravel this. Understanding why it has survived is helpful in any analysis that we might bring to bear on this. One particular reason why the process has survived is that the RITC, including any element of risk premium, effectively provides capital for underwriters and managing agents — or, at least, it allows them to manage their capital requirements better. Reinsurance purchasing can be used in a similar way.

In ¶3.1 the authors outline the actuary's role in the RITC. Setting out the method for actuarial assessment in this way is a sound and worthwhile exercise. On the use of the special term 'actuarial RITC', I am less enthusiastic. There are some elements of this process, such as bad debt reserves, where we do need to be careful not to put these forward as being the exclusive preserve of the actuary. Clearly, the interaction with underwriters, finance directors and other parties is central in this.

In Section 5.1 the paper covers a number of aspects of the actuarial opinion and the RITC. I am concerned with any suggestion that the RITC should be set equal to the solvency reserves. These are two different processes with different purposes. As Mr Ross mentioned, there is a danger that the actuary's one-sided opinion is somehow seen as a substitute for the fuller process.

It may be that the RITC process will not go forward. It may be that an actuarial assessment may also not go forward. Even if the system is replaced or remodelled, many of the arguments set out in the paper are extremely relevant. In the longer term, I support the development of a formal role in financial condition reporting which would allow us to address all of the issues, or least many of the issues, on risk and variability.

Mr P. W. Wright, F.I.A.: At the present time the RITC system is effectively part of the process of the migration of Lloyd's business from ownership by individual Names to ownership by corporate capital vehicles. Some of these new capital vehicles also control the management of the underwriting agencies, and in this situation there is clearly a conflict of interest present in setting the RITC premium, because a high premium will benefit the owner of the managing agent at the expense of the former individual Names. I am not a Lloyd's practitioner myself, and I stress that I have no personal knowledge of any actual market abuse arising from this conflict of interest, but, speaking as an outsider, I can see that now would be an appropriate time for Lloyd's to introduce some further safeguards into the system for controlling the RITC process.

In Section 3 the authors describe the steps which they believe would be necessary to determine a theoretical RITC. I agree strongly with them that a risk margin is appropriate, and that no insurer would knowingly take over claims provisions at only a discounted best estimate

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level — notwithstanding any theoretical arguments about the ability to diversify risk through investment in other enterprises. I would hope that the Inland Revenue could also be persuaded to accept this argument. However, in practice we and the International Accounting Standards Committee (IASC) must come up with some practical method of determining the fair value of general insurance liabilities.

The simplest solution, and one which seems to cater for the majority of claims provisions, would be to agree an adjustment to the discount rate — probably with the adjustment varying by class of business. This would still leave certain problematical claims, which actuaries tend to take out of their reserving triangles, where the volatility risk could not be reasonably represented in this way. An obvious example, at the moment, is Y2K remediation costs, whose outcome depends entirely on decisions to be taken by United States courts, and where the best estimate of the liability is very low. For RITC, the solution here is probably that syndicates materially affected by such claims should leave their year of account open until greater clarity of ultimate cost can be determined. This suggests that any actuarial guidance note on RITC will probably need to reintroduce some aspects of the old GN14. For the IASC fair value calculations, the issue of these 'difficult' claims is not so easily ducked.

For the typical Lloyd's business, I would not be surprised if the risk adjustment that I have described was close to the current yield on risk free assets of term matching those of the liabilities. The higher yield on U.S. Treasuries, as compared with U.K. gilts, more or less matches greater run off risk associated with U.S. liability business. This suggests that the current Lloyd's practice of setting RITC equal to the solvency reserve is probably acceptable, provided that the latter is based on 'best estimates' — that is the lowest reserve permitted currently to receive an unqualified actuarial opinion. I would be concerned, however, if the form of the statutory actuarial opinion (that is, its one-sided nature) was giving any encouragement to excessive RITC premiums, particularly given my opening remarks.

The expected broad equality between a theoretical RITC premium and a best estimate undiscounted claims provision is a function of current government bond yields. If we go back a few years, it is hard to see how the Lloyd's approach could fail to produce, in theory, an excessive RITC premium, even given the possible need to cover internal claims handling expenses and reinsurance bad debts. It is then strange that the historical problem with Lloyd's related to too low, rather than to too high, RITC premiums. We should, however, not let this past experience cloud our judgement as to the correct approach going forward. The regime of actuarial opinions should ensure that the undiscounted reserves do not rely for their adequacy on implicit discounting or on an optimistic view of the outcome of the development of latent claims.

Mr P. H. Hinton, F.I.A.: This is a useful and provocative paper. Some parts seem obvious common sense; I disagree with other parts. My remarks are confined to two aspects: the solvency opinion and some implications of the work that would underlie a so-called actuarial RITC.

If you ask a question, the answer you get depends on the precise question asked. The current statutory solvency opinion attempts to answer the question: "Are the solvency reserves adequate?" The authors suggest replacing this by an opinion which answers the question: "Are the reserves held reasonable?" This would provide much less comfort for both the regulator and the policyholders. The inconvenience of having different figures for solvency and accounting purposes does not strike me as sufficient reason to compromise either objective.

Technical provisions for insurance companies are subject to the reasonableness test. When it matters (that is, when capital is tight) the directors will choose provisions which, while not demonstrably inadequate, will probably prove to be inadequate. The dangers of this are self-evident.

Some Lloyd's participants may be tempted by the additional freedom of a company outside Lloyd's to set its provisions at a low level, and leave Lloyd's to seek authorisation as an insurance company. For others the advantages of Lloyd's will outweigh this perceived disadvantage. Having strong reserving standards does provide Lloyd's with a valuable selling

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point. If I were a member of Lloyd's, I would regard it as valuable protection against other members exploiting the central guarantee to my disadvantage.

My objection is not to a two-sided test, but to a 'reasonableness' test. One might construct a two-sided test such as: "Are the reserves adequate, but not excessive?'' I believe that this would meet the objectives of most of the stakeholders described in the paper.

Section 3 — which I believe to be the core of the paper — states that there is no specific U.K. professional guidance on the identification of risk margins. This misses the point, which is that there is no consensus, within or without the actuarial profession, about this. That is a pity, since, in principle, the 'actuarial RITC' is the sensible way to evaluate the RITC.

The type of analysis described in Section 3 is extremely valuable. The profession could add considerable value by illustrating uncertainty in this way. For many lines of business the data available to construct a detailed model are unavailable, but simple projections on reasonable assumptions, showing alternatives, would still be useful.

The paper's main focus is on a single opinion to support the RITC or the reserves held. Equally valuable, if not more so to those interested in a syndicate or a company, would be some measure of uncertainty. I would welcome the thoughts of the authors on what might be reasonable for a reporting actuary to say to quantify or illustrate the uncertainty for the benefit of third parties, whether as part of a financial condition report or otherwise.

Mr G. P. M. Maher, F.I.A.: The authors mention the likely short lifespan of the RITC process, which is dependent on the existence of the annual venture, and, in particular, on the difference between the interests of the capital supporting one underwriting year and the capital supporting subsequent underwriting years. Predictions as to the future capital structure of Lloyd's are difficult, and perhaps not to be ventured, but I think that the context is important.

I think that it is fair to say that the demise of the annual venture is inevitable, and that it will not be very long in coming. I am aware that the authors touch on this, but I should like to emphasise the point. Few individual Names are now joining the society. The last intake was barely a handful, and each year sees hundreds of individuals leave the society. Their places are being taken by corporates who, ever increasingly, are investors aligned with specific groups of syndicates. Such participation as they have in other syndicates, they are divesting through bilateral deals and other mechanisms, and, for fully aligned syndicates, the traditional RITC considerations fall away.

Additionally, the reduced role of the individual Names is a natural consequence of their age, as they seek to restructure their portfolios in ways more appropriate for their states. Increasing losses now emerging at Lloyd's will increase the pressure on individual Names, and the recent Budget changes, if carried through, may exacerbate this process, since they may lead to situations where the individual Names are required to meet accounting losses based on undiscounted reserves, while paying for taxation profits-based discounted reserves. Corporate investors will also, in due course, exercise their rights to buy out non-aligned capital, further reducing the role of the RITC process.

I believe that, by the time the many difficult issues noted in the paper have approached resolution, it is likely that interest in this RITC process will have dwindled, and the RITC will be academic for all but a few market participants. This is not to detract from the value of this paper, which covers much more than the RITC process, only to place it in context.

In Section 3.3 the authors referred to 'fair value' accounting. Indeed, some might even say that this may well be the real subject of this paper. The authors raise a number of issues, most particularly with regard to the valuation of liabilities. There are, as we know, severe difficulties with the extension of the 'arms length' concept to the valuation of insurance liabilities, and it is important that actuaries make their contribution in this area if we are to avoid unrealistic demands on the industry.

The authors note, in ¶3.3.3, that there is no deep liquid public market for such liabilities. I fear that they are overgenerous. It is not that there is no deep liquid market, it is that, in the vast majority of cases, there is no market whatsoever. Some elements can be moved off the balance

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sheet through reinsurance and maybe through securitisation, at least in the future, but these hardly constitute a market. The prices are not publicly ascertainable, and, in most cases, reflect the particular circumstances of a transaction which, if they are extended to individual cases, (even if that were possible), would be disruptive and little understood by the outside world. All this is important where analysts, implicitly or otherwise, mark down stock valuations of companies where accounts are opaque. This will become more of an issue as these considerations become more frequent in public accounts. Actuaries have a significant contribution to make in this area, building on their success in dealing with very similar issues in the life industry. I suggest that the actuarial approach, which the authors call the actuarial RITC, may well be the correct one. Indeed, further work is required in this area.

I particularly liked the comment in the second bullet point of ¶1.4.2. This is an area where actuaries can add value, and are doing so within the Lloyd's market. Recently, valuation of a particular problematic lineslip, on which many syndicates had participated, was carried out by actuaries for the benefit of the market as a whole, providing all interested members of the market with consistent and thorough evaluation of their exposure. Actuarial involvement in this case has significantly increased the level of information available for reserving purposes to Lloyd's syndicates, and at cost savings. As the authors indicate, this is likely to be an area where further actuarial involvement will be helpful.

Mr D. E. A. Sanders, F.I.A.: One of the main issues that needs to be considered is an apparent inconsistency between solvency regulation, the need for a fair and equitable RITC, and the proposed changes in tax laws following the recent Budget. Solvency is currently based on reserves being established at a level at least as good as undiscounted best estimate. RITC, according to Lloyd's own rules, needs to consider a number of items, including investment income. Underwriters rarely take this into account explicitly.

One of the driving forces behind this is the implicit assumption that the discount margin provides an appropriate buffer or margin against adverse deviations. No real test is made as to whether this is or is not the case. There is also no test made as to what is — and I use this word cautiously — a proper solvency margin. The undiscounted best estimate is a minimal test. It could be that an equitable RITC is less than this amount, or it could be more. If it is more, because of the need to have appropriate risk margins, then the actual solvency needs to be raised at that level. However, if it is less, then this leads to another issue.

The receiving syndicate will, depending on circumstances, be required to meet the difference as an additional solvency margin. Thus, RITC tends to default to the minimal solvency — that is undiscounted best estimate — as a matter of commercial reality. This may be considered to be an arm's length, but not necessarily an equitable, transaction. Thus, these two should not be confused. Clarification and guidance will be needed on this distinction if we are to proceed.

In a recent tax case before the Commissioners of the Inland Revenue actuarial evidence was given. The evidence related to the discount process and the need to incorporate appropriate margins over and above the discounted best estimate in assessing the RITC, should discounting be applied. The same principles apply to the pricing of any insurance or reinsurance contract. This margin may be considered as an addition to the best estimate reserves, or, equivalently, expressed as an artificial low interest rate. This interest rate equivalent might be as low as zero, that is implicit undiscounting, or may even be negative in certain circumstances. The case did not address the 'over reserving' issue. There was only a small margin between the independent actuarial best estimate and the underwriters RITC, and the Inland Revenue accepted that a proper process appeared to have taken place, following cross-examination of the underwriter in court. The issue is now addressed in the proposed legislation.

It is possibly unfortunate that the recent proposed legislation does not appear to contain a margin. I think that a margin is appropriate. In my experience, based on normal insurance and reinsurance accounts, if the discounted best estimate was considered as the 50% level of certainty, then amounts between 65% and 75% of certainty are achieved by equivalently discounting at a couple of percentage points below the rate actually being received. This was the position when

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the Inland Revenue accepted a margin over best estimates for discounted accounting and taxation in the case of a major insurance company. Accounts with asbestos and pollution and the like obviously need different considerations. With no discounting, estimates fall in the range of 90% to 95% of certainty. These levels are based on simulation models, and these types of percentage were, in fact, placed before the Commissioners in a test case by both actuarial experts. In my experience, for discounting insurance companies' reserves for accounting and tax assessment, the margin used in practice gave results in the range of 66% to 75%. Based on hearsay from the U.S.A., the 95% level that we sometimes see will be unsubstantiable; it would be too high. I should like to ask a question: "Can a 95% level of certainty be considered equitable for RITC purposes if discounting is not considered?'' I would not wish to opine on that without considerable discussions and guidance, yet it is the sort of level that solvency amounts give for some syndicates. The issue before the Commissioners was essentially one of interpretation of the wording of a specific piece of legislation, an area which is normally without our expertise. The current proposed legislation will also include a need for realistic interpretation; for example, determining the discount rate that is appropriate to take account of the assets, which could include a substantial amount of non-earning broker balances or even borrowings in respect of trust funds. These are all issues which need to be addressed by ourselves and the Lloyd's community. The Budget also brings insurance in line with Lloyd's. The relevant legislation and the test case brought applied to Lloyd's only, and the discount of insurance companies' reserves had been the subject of previous hearings. The Inland Revenue documents also make reference to captives where there are similar issues.

I conclude by pointing out that it is sometimes possible to give a solvency certificate, but sometimes impossible to set up a RITC, because of the material uncertainty of a number of claims; for example, those claims which are subject to legal dispute which, if the syndicate wins, could substantially disappear!

Mr D. H. Craighead, F.I.A.: I am very pleased to see that the Working Party which produced this paper has devoted part of it to the risk premium element which is directly involved in the operation of the RITC, and should form an integral part of it, since the switch in liability between members may possibly involve a not inconsiderable liability, the existence of which may be suspected, but not known. Furthermore, the Inland Revenue is determined that reserves must be discounted.

A satisfactory calculation of the risk premium is by no means easy to set out. The authors have suggested some approaches, but I should have liked to have seen at least an actual calculation included in Section 3.4, together with the assumptions on which it was based. The Revenue will have to be convinced.

There is, at the moment, an important court case in hearing, in which some of those syndicate members who suffered large losses in the 1980s allege that they were not told about the possibility of losses arising from asbestosis claims, even though the fact that there might be large claims arising from such causes had, by then, already become known to the members of the Committee of Lloyd's. I do not know whether or not that allegation is justified, but I was not aware at that time of any discussion by underwriters or managing agents of the need to include a risk premium in the RITC, although some underwriters did comment to the effect that non-discounting would provide a shield against unexpected adverse claims development.

Indeed, the Revenue would undoubtedly have opposed any such move, as it was, at the time, bent on querying large reserves held, even quite correctly, by some syndicates when profits were being determined; more particularly as many other syndicates were holding very much lower reserves, in many cases at levels well below what we now know were necessary. The Revenue may well still be sticky in regard to a risk premium element if the amount is anything but small. In fact, we may end up with a position that there is one level of profits determined for the Revenue and another one for actual payout to members.

Yet, there were in the offing asbestosis claims, claims from environment impairment and a number of latent diseases, many of these claims going back over many years. Furthermore, the

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level of the claims liability was hard hit by the triple trigger effect, first enunciated by the Supreme Court of New York State, and then followed by many other jurisdictions.

Currently the basis of calculation of a suitable risk premium for virtually all syndicates is much eased by the existence of Equitas, which has absorbed all the earlier claims. The difficulties are likely to return, to some extent, from new and unexpected causes; perhaps from the effects of cigarette smoking. As the authors say, by that time Lloyd's may be so changed that the requirements may well be closer to those of a reinsurance company, but I would point out that the basic concepts underlying the inclusion of a suitable risk premium will also be, and indeed currently are being, involved in a proper calculation of the reserves to be held by a company. These reserves come into the calculation of the profits declared for the current year, and hence the risk premium element cannot be ignored.

Indeed, I cannot agree with the authors' contention that the risk premium element does not arise in the case of a syndicate member remaining in the syndicate. His or her percentage part of the syndicate may well change over the year end, and, in any case, there is the question of the calculation of profits to be paid out — a matter in which the Revenue will undoubtedly play a part.

A small point in regard to ¶3.2.1 — the list of possible losses should include possible losses from currency mismatching which, since the London Market is so heavily involved in U.S. risks, can be fairly substantial, in spite of the safeguards that Lloyd's keeps.

Mr G. E. Barrow, F.I.A. (in a written contribution that was read to the meeting)**:** There is one aspect of RITC to which I would like to draw attention. My own contacts with Lloyd's go back to 1939. In those days the underwriters of syndicates knew their clientele through experience gained over the years. For example, in a marine syndicate the underwriter would know the age of each ship he was asked to insure, its routes and the date of its last survey. The premium he set was thus an informed one, and if that underwriter had the respect of the other marine syndicates, they would follow the same premium.

After the war the character of the business underwent a considerable change. For example, syndicates became increasingly involved in excess of loss business, and there were technical changes, some of which arose out of the closure of the Suez Canal. Because of this, it became commercially viable to ship crude oil around Africa, and the limitations on the size of tankers imposed by the Suez Canal ceased to operate. Hence, supertankers evolved quite quickly, and brought with them unforeseen hazards. As an example, the size of the tanks which contained the crude oil grew so enormous that, when the tank was being washed out, drops of water brought an opportunity of collecting an electric charge on their descent to the bottom of the tank, which resulted in devastating explosions.

I next turn to the role of RITC in achieving equity between members. Here I divert briefly into the role of Lloyd's agents. First, I consider members' agents, whose role it was, and is, to recruit Names and, in conjunction with each Name, to develop an underwriting policy suitable for his or her means and circumstances. Under common law this puts a heavy burden of responsibility on the agents, a responsibility which, in my view, they were slow to recognise. Secondly, there were, and are, managing agents who managed several syndicates. They were responsible for the appointment of the underwriter and the administration of those syndicates. Thirdly, there were agencies which combined both roles, that is finding Names to provide capital for the syndicates which they managed, and also for the running of the syndicates.

In the relatively stable world pre-war the RITC was passed on to the same syndicate in the following year, but, although nominally the same syndicate, that of the succeeding year did not consist of the same Names as had comprised the syndicate in the preceding year. For example, some Names may have died or resigned, new Names may have joined, and other Names may have altered the amount of their underwriting. Provided that the Names comprising the syndicate in year two were broadly the same as those who had comprised the Names of the same syndicate in the preceding year, then, painting with a broad brush, there was no manifest inequity, provided that the RITC was calculated on the same basis from one year to the next.

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The situation altered when the provision for claims incurred, but not notified, particularly in respect of long tail business, became 'guesstimates' rather than soundly-based estimates. Effectively, a new member joining the syndicate had no means of knowing that the syndicate had already incurred liability for which it had received an inadequate premium.

Unless the RITC for long tail business can be calculated with reasonable precision, an incoming member is faced with what, in commercial terms, would be called a false prospectus. In my view, there was no deliberate intention to deceive, but the documentation to enable any outstanding liability for long tail business was just not available. The calculation of the appropriate RITC is fundamental to the equity offered to individual Names.

Mr G. G. Wells, F.I.A.: The authors propose two-sided opinions as being more in the collective interest of a large proportion of stakeholders in Lloyd's syndicates than the existing statutory opinions. This may be the case, particularly as corporate capital increasingly dominates and Lloyd's vehicles become essentially insurance companies. However, while the Lloyd's market moves this way, there is still a little way to go before we reach such an ultimate position. The existence of traditional Names means that the concept of equity must be maintained (at least) for this class of investor. With this in mind, the two-sided opinion does cause me a little concern.

At present the responsibility for equity in an RITC resides with the managing agent. An actuary giving a related two-sided opinion would be formally supporting (or otherwise) the managing agent in the RITC process. Given that there are, presently, two different sides to this commercial transaction, I believe that we need to be quite clear as to what role the actuary is playing. In similar transactions, such as mergers and acquisitions, commutations and portfolio transfers, it is very rare to have the same actuary advising both sides. The interests of the two parties in such transactions are normally polarised at opposite ends of the valuation range. The 'purchaser' wishes to pay as little as possible, while the 'vendor' wishes to receive as much as possible. Within this range will lie valuations on equitable and 'arms length' bases. These valuations will not necessarily be at the same point in the range, and, in practice, are almost certain to be different because of risk considerations.

In practice, each party to, say, a commutation will be advised by its own actuary (normally from a firm of consultants), and, within the bounds of professional guidance and conduct, each such actuary will evaluate the transaction being considered from his or her client's perspective. Further, in each case the actuary concerned will have a clear knowledge for whom he or she is acting.

An RITC between two different sets of Names also falls into this category of transaction. So, while not necessarily proposing different actuaries for either side of an RITC, we need to be clear why we should treat the RITC process in a different manner to, say, a commutation.

The events of the not too distant past leading to Reconstruction and Renewal and the creation of Equitas should act as a clear reminder to all actuaries of the potential difficulties we could have encountered had two-sided opinions been in force back in that period. However, I do accept that Lloyd's is a somewhat different animal today than before the creation of Equitas, at least in terms of its capital base, but this is not the reason to adopt two-sided opinions. Before doing so, we must ensure that the issue of equity can be properly addressed.

Mr P. K. Clark, F.I.A.: Most actuaries accept that, if allowances are to be made for future underwriting income in assessing RITC, then a risk margin needs to be included in the RITC. I hope that the actuarial profession will take a leading role in ensuring that its voice is heard in the discussions with Lloyd's, the ABI, the Inland Revenue and others.

Section 3.3 deals with fair value accounting and the recent proposals of the International Accounting Standards Committee for Insurance Accounting. As both a representative of the actuarial profession on the joint actuarial/accountancy group that is formulating our response to the IASC and also a Lloyd's signing actuary, I consider that the paper may be over-simplifying matters to suggest that the actuarial RITC would necessarily be consistent with the proposed fair value accounting concept of the transaction price between a knowledgeable and willing buyer and seller.

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The paper is deliberately not specific about the elements in the risk margin, but in ¶3.4.3 talks about the variations in the frequency and severity of future claims. The IASC's proposal, based on the Canadian Institute of Actuaries' recommendations, considers that the risk margin should allow for the mis-estimation of the mean of expected claims and for the possible deterioration of this mean. It specifically excludes statistical fluctuation and catastrophic or similar major unexpected events. Given the illiquid nature of the insurance market and the practical difficulties in diversifying away such risk, the vast majority of actuaries would include elements such as statistical fluctuation in a risk margin in setting an RITC.

Another possible difference between the actuarial RITC and fair value is that fair value accounting in assessing a transaction price could have regard to transactions in the market place that would necessarily be dependent on the position of the market in the insurance cycle. I am not aware that anyone is suggesting that this should be a factor in determining an RITC.

Mr A. D. Smith: I support the opener in hesitating to use the word 'actuarial' in 'actuarial RITC'. The problem of valuing uncertain cash flows is an important economic problem, which very many economists, not just actuaries, have sought to address in an extensive literature. One important test of any method is to consider merging two lines of business and to ask whether the merger would increase or decrease the combined RITC. To satisfy the accountants' fair value definition, we would need an RITC formula that was not affected by merging or demerging lines of business. This reflects the same property on the asset side. To find the fair value of a portfolio of assets, everybody agrees that you should add up the market values of the constituent investments. It makes no sense to apply further covariant adjustments for the total, whether we are dealing with assets or with liabilities.

Sections 3.5 to 3.7 describe traditional actuarial measures, such as the probability of ultimate sufficiency, the expected return on notional capital employed, or the expected reserve deficiency. In my experience, these ideas are best supplied to individuals or to company managers who see the world from their private risk-averse perspective. They only make sense at an aggregate portfolio level. I would not expect to get useful information from applying these methods to a single cohort of business, as would be required in an RITC assessment. The method has also failed to give useful margin predictions at the super-business or market level. So, I would agree with Mr Clark that current methodologies outlined in the paper would fail to satisfy fair value criteria.

It may be that actuaries decide to find their own way on cash flow valuation, without seeking to understand the financial economic literature. For example, the approaches that Mr Wright and Mr Sanders mentioned, while rather eccentric, may, nevertheless, have some tax benefits, but we are likely to encounter many difficult questions on the way. I hope that we can avoid the rather public wheel reinvention which pensions actuaries have witnessed over the last few years. It will be embarrassing if general insurance working parties were to fall one by one into pitfalls that economists had identified, published and solved 20 years ago. Instead, if we are to develop fair value concepts which are acceptable to the outside world, we need to follow the approaches of Section 3.9, which will give us a head start by building on the existing economic literature.

My colleagues and I have already carried out much of the research that the paper recommends, and to which the opener referred. We have found that the concept of state price deflators gives direct answers to many difficult and varied valuation problems in insurance. We have turned these ideas into essentially mechanical valuation procedures, which we apply to output from our DFA models in general insurance, life and pensions work. These offer consistency with fair value definitions within a framework that is amenable to publication as clear and prescriptive guidance. We hope to publish more of this in due course.

Mr A. R. Jones. F.I.A.: Section 3 discusses the concept of an actuarial RITC, where the actuary is signing off the RITC premium itself. I am not persuaded that this is an area that actuaries should be getting involved in, because it involves complex judgemental and commercial issues that go beyond actuarial aspects. For example, the paper raises the issue of the risk

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profile of the accepting Names. That raises the questions: "How do you measure it?", "How do you apply it?" and "How are you seen to be fair to both sides of the transaction when allowing for this risk profile?"

Another example of the difficulties is allowing for an obligation to receive the RITC. When I used to work in the market, my perception was that, when you signed up and joined a syndicate, you participated in a continuing process, you expected to receive an RITC in due course at a fair price, and then to pass one on. Contrast that with a syndicate going into run-off, which is buying an RITC into the market that will have a fairly hefty risk premium in it. In between syndicates can merge or reorganise, where perhaps the management team is ongoing, but the syndicate number has changed; here the risk premium might be somewhere in between. To claim to act for both sides and to set the correct risk premium when practice can vary like this is very difficult. It is going to lead to unpopularity, because someone is not going to believe that you have acted in their interests — and it could lead to poverty as well, when you get sued.

I am also concerned with the difficulty of obtaining consistency in the 'actuarial RITC'. To my mind this is one of the tests of whether or not it is appropriate to apply professional certification. Different actuaries asked to look at the same issue should come up with broadly the same answer. At present it is unlikely that different actuaries would choose the risk margin consistently. So, it is better for the actuary to be a provider of independent estimates of what the claims will cost. This can be a starting point for the managing agent to build on, applying any adjustment for the risk profile of accepting Names if he or she deems that appropriate.

Paragraph 5.1.7 refers to the two-sided opinion already being done in a number of cases. From my perspective of the market, effectively it is done in a large number of cases.

My second theme is to do with measuring the risk margin. Section 3 discusses explicit risk margins and discounting. The challenge to us, as actuaries, if we are going to go down this road, is to demonstrate that the accuracy and the insights that we bring are worth the extra work, the complexity, and possibly the opaqueness involved. We need to keep in balance the complexity of the theoretical edifice that we construct with our lack of knowledge in key areas, notably parameter and model uncertainty.

The paper concentrates on DFA to try to quantify risk margins. My experience of where current leading-edge work is getting, particularly in the banking and the merging of the banking, insurance and the capital markets sectors, is to use downside scenario evaluation. I have found this more transparent, easier to communicate, and a much easier foundation for incorporating correlations across the portfolio in a logical way. I know that Lloyd's already has a range of realistic disaster scenarios which focus on the current underwriting year. Taking some of those concepts and applying them to reserving risk would be helpful.

As the paper alludes, it is not a great leap from looking at risk margins to looking at capital, and this raises some important issues. If we start looking at volatility and risk margins two years into the account when a syndicate is receiving an RITC, then there is a read across to the level of capital needed to support the RITC. However, under the current regime the level of capital would have been set two years previously, at the outset of the account. The regulatory treatment of inconsistencies would need to be decided on.

Mr A. V. C. Cook (a visitor, Technical Director, Accounting Standards Board)**:** It seems to me that the authors of the paper are tackling a problem that is being challenged anew, both in your profession and in ours. The old idea was that the first principle of a good accountant was to get the losses under your belt, thus demonstrating that you were a good, conservative and prudent accountant, and then there would be no tears. Nowadays the emphasis — certainly the emphasis in our own statement of principles, which I am glad to say that we have now finalised after ten years of debate — is very much on neutrality rather than on prudence. Prudence is still there, because nobody wants to be known as imprudent, but the keynote, really, for accountants is neutrality. I think that this paper and the discussion really brings out why that should be so.

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Just as actuaries can find themselves holding the ring in a two-sided opinion between different generations of Names, so accountants finds themselves holding the ring between different generations of shareholders. The difference, perhaps, is that accounts have many imponderables in them, and nobody expects balance sheets to provide explicit valuations of the whole business. The balance sheet is there to enable analysts and others to make a good judgement about what the future cash flows of the business are going to be, but, of course, when you have particular areas of uncertainty such as major provisions, the really important thing is that you do not mislead your readers. Maybe you cannot quantify it all, maybe some of it has to be by way of narrative disclosures, and so forth, but the old idea of stepping up the provision just for safety is no longer quite as acceptable as it was.

Accountants are now more and more tending to emphasise the importance of fair values, and the authors and other speakers have brought out very well the problem of what to do when you cannot find the fair values. I was attracted by two of the aspects in the authors' proposals. The first is the use of the time value of money. It has always seemed to me a complete mystery why general insurance provisions should not be discounted. I know that they are not allowed to be discounted, but how did the industry ever allow that position to arise? One cannot help feeling that it was because of tax, and so I will be fascinated to know how attitudes in this country will change as a result of the new system announced in the past few days.

The most important thing in the proposals of the authors is the detailed modelling. That is exactly how businesses have to set about their own business plans. Nobody can predict the future, but the more careful you are and the more precise you are in your modelling, the better chance that you have of understanding the dynamics of your business, and of working that into a business plan that all parties can then understand. Nevertheless, I share the misgivings of a number of speakers over the ability of one person to do these calculations in an effective way. The FASB has put a lot of emphasis into using the market whenever it is there. Certainly we would be in a better position if one could have seen actuaries on both sides, advising both the ceding and the reinsuring sides, followed by negotiations between the two. If there are numerous deals undertaken in that fashion, you do, indeed, have a fair value. All this is not to say that the work of detailed modelling is unnecessary. It is extremely valuable in helping the parties who enter into that kind of negotiating process, and no doubt we will see improved markets in the future if these ideas can be put into action.

Mr S. Chandaria, F.I.A.: The authors suggest that a practical alternative to signing off on the actuarial RITC would be to extend the current one-sided solvency opinions to two-sided reasonableness opinions on the reserves underlying the RITC.

I have three main comments:

(1) It is true that many actuaries do already get involved in the RITC process, in addition to providing the required statements of actuarial opinion. Indeed, in my own organisation my audit colleagues always require a view on the reasonableness of the reserves held by the insurer, whether the insurer is a Lloyd's entity or a non-Lloyd's entity.

(2) At first sight this extension to the existing statements of actuarial opinion (SAOs) might appear to be a relatively straightforward low-cost alternative to opinions on the RITC. There are, however, some practical issues. For example, what is reasonable and what is not reasonable will differ greatly between syndicates. In determining reasonableness, the actuary will need to give consideration to the nature of the underlying business written, the completeness and reliability of the data available, how long the syndicate has been writing, and the actuary's judgement of the uncertainty in the reserving process. In order to remove some of the subjectivity in a reasonableness opinion, it may be of more value to all concerned if reasonableless could be defined in terms of, let us say, a probability distribution. This definition could be based relative to the mean estimate which is currently used for solvency opinions; for example, as the number of standard deviations or some level of percentiles away from the mean. In the absence of a detailed DFA analysis, the actuary's considerations are likely to be based more on benchmarks derived from the actuary's wider experience, which may or may not include the DFA experience.

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(3) This concerns equity between the ceding and accepting Names, which is of the utmost importance. How will equity be maintained in a situation where the two-sided actuarial opinion on reasonableness shows the reserves underlying the RITC to be too high? Similar issues concerning equity may also have arisen when the solvency opinions were first introduced, in situations where the reserves underlying the RITC were considered to be too low. The issue of equity is even more important at the current time, as there has been a significant shift in the capital base from traditional Names to corporate Names, and so Lloyd's will need to be particularly careful that the process is as transparent as possible.

My experience of financial condition reporting or DFA or asset/liability modelling, or whatever you wish to call it, is that, while the added value is high and the insight provided to management on its business is considerable, such analyses are very time-consuming and labour intensive. As a consequence, the cost can be high and can be comparable to, or greater than, the cost of the original syndicate reserving analysis. While the cheaper alternative may be to benchmark or to employ a series of tests, as they do in Canada, my experience is that it is very difficult to ensure that the benchmark or the tests are either appropriate or reasonable for the syndicate concerned.

Mr D. M. Hart, F.I.A.: It is my perception that there is an element of uncertainty in certain parts of the market as to the current role of actuaries. In particular, some commentators appear to believe that the actuarial opinion on the adequacy of a syndicate's solvency reserves in some way constitutes an opinion on the reasonableness of the RITC. The paper makes it clear that there are a considerable number of additional factors to take into account in consideration of the RITC. I am in full agreement with their analysis of the position.

The one area on which I believe that the paper is relatively quiet is the issue of equity. I am pleased that Mr Chandaria has picked up on that. This is a matter of fundamental importance to the process, and is one on which I believe that actuaries are well-qualified to comment, given their involvement in the determination of bonus rates on with-profits life policies, which is a very similar situation. With the increasing reliance on corporate capital in the market, the importance of equity is likely to reduce in future, as others have mentioned; but I believe that it is still currently very relevant, especially in relation to the transition from individual to corporate capital provision.

With equity, first there is the need for stability of approach and consistency of assumptions from year to year. Whilst the paper outlines an appropriate set of ground rules in determination of a premium for the RITC, it is necessary to bear in mind that there is a great deal of scope for judgement in relation to the myriad of detailed assumptions which underlie the final figure selected. The impact of changing only a small number of such assumptions can very materially affect the profit or loss falling to a particular generation of capital providers. Great care will be needed to ensure that such consistency is maintained. I am pleased to be able to use the word 'maintained' in this context, as, in my opinion, the vast majority of underwriters have, over the years, exhibited great integrity in their exercise of this onerous responsibility.

My next consideration of equity is closely connected with what I have just considered, and relates to the situation where the past premiums for RITC do not properly reflect all the factors outlined in the paper. In particular, I believe that there are likely to be a number of syndicates for which the 'additional provision', as defined in the paper, should be non-zero, either positive or negative. This is because the implicit balance, to which Mr Sanders referred, and on which most underwriters have relied, between risk loading plus profit loading on the one hand and future investment income on the other, does not actually exist. In such cases, I believe that it is desirable to move to a basis which reflects all the relevant factors, as described in the paper. Unfortunately, such a move would bring with it an issue of equity, in that it would result in an inconsistency from year to year.

There appear to be two options as to how to deal with such a problem, either by an immediate change to the new basis or by a gradual transition over a period of years. I believe that the method chosen should vary according to the circumstances of the syndicate. In the event

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that successive years have identical capital constitutions, there should be no real problem in making an immediate transition. However, if the capital backing the syndicate changes from year to year, a gradualist approach is likely to reduce the level of inequity, and may be preferable. There then arises the tricky question as to how many years should be involved in the transition. My view here is that this will again depend on the specific circumstances, but I would prefer as short a period as can reasonably be sustained.

The final aspect of equity on which I wish to comment is also relevant to wider issues than equity, although I consider equity to be one of the most important. This is the matter of where the ultimate responsibility should lie for the decision on the RITC premium. The paper clearly sees a potential for an additional role for the actuary in the process. In particular, there is a major actuarial aspect in the estimation of risk loading and of future investment income. However, the paper does not suggest that the fundamental role in the process should move from the underwriter and the board of the managing agent. I agree that this is the correct home for this responsibility, which, as mentioned earlier, I believe to be in good hands.

If it is agreed that there is need for explicit allowance to be made in the RITC premium for risk loading, profit loading and future investment income, then I believe that the actuary should be able to assist the underwriter in determining some or all of these items. However, I would prefer that the actuary was not required to sign off the final figure, as I believe that serious problems of the division of responsibilities are likely to arise. I do not believe that this should be confused with the actuary's role in giving an opinion on the adequacy of the solvency reserves for the benefit of policyholders, a role which I whole-heartedly support.

Mr P. A. Ellis, F.I.A.: My belief is that there are relatively few syndicates where the RITC is demonstrably unreasonable. In the bulk of cases it is likely that we, as actuaries, would not necessarily add much value, although possibly adding significantly to syndicate exposures, depending on the depth of our analysis. It may well be that, for a relatively few cases where there are obvious concerns, an actuary could fairly quickly address the issue with a letter. It would not necessarily have to be a formal process.

I have a fundamental disquiet, in that the world is a complicated place, and I wonder whether, in the context of a real Lloyd's syndicate, we can capture the complexity in a model and do a materially better job of the RITC process than that which is currently done in the majority of cases by skilled underwriting and agency staff. I would be particularly uncomfortable if we, as a profession, pushed hard for a move to full financial condition analyses.

Developments in the last ten or 20 years can illustrate the dangers. Most of us would not have foreseen the severity of many of the developments that have arisen. The risk margins that we would have come up with would probably have been inadequate. I have relatively little practical experience in this area, but even in my two or three years involved in giving actuarial solvency opinions for Lloyd's syndicates, I have seen outturns which have surprised me, rather more often on the bad side than on the good side. Maybe that is my fault, but I suspect that the majority of opining actuaries will have shared my experience.

It would be better if we, as a profession, devoted our relatively limited resources to areas where we can add value. Demonstrably these exist, but I am not convinced that the actuarial RITC is, necessarily, a good move. I believe that the current solvency regime does add value, and I welcome it, but I think that there is a risk that we may overplay our hand here. Respect for actuaries at Lloyd's has taken some time to build, but could quite easily be lost if we generate excessive expectations.

I believe that the current RITC process is not bad. An actuarial RITC could be of limited value to managing agents, and potentially quite expensive. Even a 'state of the art' actuarial model would not be able to incorporate the many complex factors involved. The profession could even be discredited if we overstate what is achievable in this area.

Mr P. N. S. Clark, F.I.A.: I want to pick up one point that the opener made about the difference of opinion within the Working Party as to whether an employed actuary would be able

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to sign off an actuarial RITC. I am not debating whether any actuary should sign it off, but, if such a certificate is given by an actuary, can it be given by an employed actuary? This follows on from some of the comments of recent speakers. Mr Hart made a comment about equity, and about this being very similar to the situation in a with-profits company, and Mr Chandaria spoke about the advantage of significant detailed knowledge of the organisation. If there is a question about whether an employed actuary can give a significantly independent view, that surely also applies to an Appointed Actuary of a life company giving a sufficiently independent view of the finances and the equity of that organisation.

You will not be surprised to hear that I think that an employed actuary can do that in a life company, and, if that is the case, I would be very interested to hear the views of those members of the Working Party who feel that an employed actuary could not do that in an RITC environment.

Mr A. J. Newman, F.I.A.: I want to comment on the idea that an actuary cannot give a two-sided opinion in a RITC — cannot hold the ring, as it was expressed. I think that there is an inherent conflict, but it is not the actuary's conflict; it is the managing agent's conflict. The managing agent has to take into account both the ceding Names and the receiving Names, and the managing agent needs advice. If the managing agent needs advice, it should not be beyond the wit of the competent actuary to provide that managing agent with some advice. If there are changes that need to be made to the system to ensure that both the ceding Names' and the receiving Names' interests are taken due account of, then that needs to be done by Lloyd's in the RITC system; I do not think that it is necessarily the job of the actuarial profession to do that.

Mr R. A. C. Hewes (a visitor, Finance Director, Lloyd's of London)**:** Equity, as Mr Newman said, does seem most important for the managing agent, who owes duties in both directions, to both sets of Names and, in coming to what is a fair and equitable RITC, to have input from the auditor who signs off on those accounts. This is different to the prudence concept which is most important in terms of policyholder protection in underlying the solvency calculation. This difference has come through pretty clearly in quite a number of the comments that have been made.

With the recent tax changes that have been foreshadowed, it seems to me to be most important that tax should not be something that influences unduly that which is set either for the RITC or for the solvency reserve. It seems important, both from the standpoint of the members of the syndicates and for the policyholder who is concerned about solvency, that tax is not a driver and an influencer of how those figures are set.

Is this all a waste of time, because, maybe, the RITC does not have very much in the way of life left in it? As an earlier speaker said, that depends on the life of the annual venture. With a substantial proportion of our capital at Lloyd's still provided on a spread basis, maybe corporate, but still on a spread basis, I think that the RITC is with us for some time. On that basis, I think that this debate is far from a wasted effort.

Mr J. R. Bulmer, F.I.A. (closing the discussion)**:** I believe that actuaries could add value to the RITC process by determining whether there is sufficient certainty to permit the closure of a year of account. This would be professionally more satisfying than confirming that there is sufficient uncertainty to justify leaving a year open. It may also be helpful to auditors, who, in my experience, are always very interested in the actuary's view of uncertainty in respect of the closing year of account. Actuaries are well placed to describe, analyse and measure uncertainty.

Like the authors and many contributors to the discussion, I am attracted to the concept of the actuarial RITC, both for the assessment of the RITC premium and for the purposes of fair value accounting, although some contrary views were expressed. I have some comments on the calculation of the actuarial RITC:

(1) In the context of the Lloyd's RITC process, I consider that the risk margin should include allowance for diversifiable non-systematic risk as well as systematic risk. It is harder for a

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Lloyd's member to diversify underwriting risk than for an investor to diversify investment risk, because, as explained by Mr Maher and in ¶3.3.3, deep and efficient secondary markets do not currently exist for most insurance liabilities.

(2) The paper proposes three alternative methods for calculating the risk margin, and suggests benchmarking these methods against other situations in the insurance industry where risk is transferred. I believe that it is essential to adopt a consistent and pragmatic approach in this area. As Mr P.K. Clark mentioned, the appetite and price for risk within the insurance industry fluctuates considerably over the course of an insurance cycle, and may change significantly over a short period of time following a major catastrophe. Although I accept that the risk margin should vary to some extent to reflect changing market conditions, excessive fluctuations are undesirable, neither in the context of the Lloyd's RITC process nor in fair value accounting. This is an area where the actuarial profession can take the lead by developing and promoting consistent methodologies and assumptions.

(3) It is interesting to note that the IASC are currently undecided about whether or not the fair value of an insurer's liabilities should incorporate the expected return on the insurer's assets, rather than a risk-free matched rate. This is relevant to the Lloyd's environment, where syndicates now have greater investment freedoms than previously, freedoms that they are not using currently to any great extent. I favour the use of the expected return on the insurer's assets, which has a precedent in the assessment of life company embedded values. As Mr Sanders explained, the discount rate would also need to reflect whether or not all the assets are investable.

Several speakers have commented on the tax changes for Lloyd's members and general insurance companies, which were announced following the recent Budget. Comment has focussed on the discounting aspect. However, the press release also states: "If it turns out that they (Lloyd's syndicates or general insurance companies) have had tax relief for significantly more than the value of the claims actually made ... they will have to pay what amounts to an interest charge on the tax deferred''. In other words, a favourable run off will be subject to an interest charge, even if the original claims provision was assessed appropriately, based on the best information available at the time. This appears to be a significant change in approach. The press release, also, is silent on what happens if the claims run off is favourable.

The authors suggest, in Section 3.10, two alternatives for the wording of a statement of actuarial opinion on the RITC premium. I am not convinced that the wording in ¶3.10.1 necessarily implies that it is reasonable to close the relevant year of account, and I think that it would be preferable for the actuary's view of this to be reflected explicitly in a separate statement.

I agree with Mr Chandaria that, before actuaries provide opinions in this form, it is desirable that the meaning of the word 'reasonable' should be clarified. The Professional Standards and Guidance sub-committee of the General Insurance Board is currently looking at the definition and interpretation of terminology in current use. Mr Chandaria mentioned some areas which need to be considered. Other areas include:

— Does a reasonable estimate lie within a range of possible outcomes or, more likely, within a range of reasonable estimates?
— Is the range of reasonable estimates symmetric around the best estimate? The current wording of the variability section of the Lloyd's solvency opinion suggests that the distribution is skew. The opinion uses the words: "In most classes of business, the scope for adverse development exceeds the scope for favourable development''.
— How should the actuary deal with situations where the uncertainty is not overwhelming, but is nonetheless difficult to analyse? Examples might include:
    — significant reinsurance disputes;
    — the possibility of significant reinsurance exhaustion; and
    — uncertainty regarding the basis of future bodily injury awards in respect of U.K. motor and medical malpractice business. (This is a topical issue following the recent release of the consultation paper by the Lord Chancellor's Department.)

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Mr Hart, in my view rightly, emphasised the importance of judgement in these areas, based on a rational underlying analysis.

The authors, supported by Mr Wells, rightly drew attention to the potential professional liability issues surrounding an actuarial opinion on the RITC premium, which would involve responsibilities to two sets of Lloyd's members on different sides in a commercial transaction, including considerations of equity between these different parties. I do not see this as a problem in the context of a statutory opinion, provided that the actuary's responsibilities were defined clearly by Lloyd's and in professional guidance. Mr Hart referred to the fact that Appointed Actuaries to U.K. life assurance companies have, for many years, considered similar issues of equity between different generations of with-profits policyholders. Responding to Mr Ross's question, like Mr P. N. S. Clark, I can see no reason why employed actuaries should not sign RITC opinions, provided that the role and responsibilities of the signing actuary are clearly defined.

An RITC premium is normally paid to the successor year of account of the same syndicate. However, as discussed in the paper, it is conceivable that a premium could be paid to another syndicate or an external reinsurer. Alternatively, the liabilities could, under certain circumstances, simply be run off. I believe that any actuarial opinion on the RITC premium should explicitly exclude consideration of whether the course of action being undertaken by the managing agent is the most advantageous transaction for the respective groups of Lloyd's members.

Paragraph 8.3 comments on the apparent anomaly of different actuarial requirements between Lloyd's and non-Lloyd's companies. This is not necessarily an anomaly in my view. Underwriters at Lloyd's enjoy a variety of privileges including:
— the international network of licenses in over 60 countries;
— the strength of the Lloyd's brand;
— the ability to provide capital by letters of credit;
— access to the Lloyd's market credit rating and Lloyd's central services; and
— a lower level of capital for start-up ventures than a U.K. FSA regulated company.

It seems to me that it is not unreasonable for these benefits to be associated with a different structure of regulation.

The Lloyd's market has been subject to unprecedented change during the last 10 years. As the opener mentioned, the actuarial profession has made a major contribution to Lloyd's during this period, demonstrating innovation and adding value in a variety of areas. These include:
— heavy actuarial involvement in the Equitas project;
— the Lloyd's risk-based capital system;
— providing input to the rating process for individual syndicates;
— the development of open year certificates;
— assistance in reducing funding requirements for Lloyd's U.S. trust funds; and
— the introduction of Lloyd's solvency opinions, which require solvency reserves to be greater than or equal to the actuary's best estimate of future claims less premiums. My strong impression is that actuaries have adopted a thorough and rigorous approach to these opinions. Actuaries have also demonstrated innovation in developing methods to incorporate reinsurance bad debts, future unallocated loss adjustment expenses and year 2000 claims into solvency opinions. Thankfully, the actuarial approach to year 2000 claims did not need to be tested to the limit, but the profession was ready had this been necessary.

The actuarial profession looks forward to being of continued service to the Lloyd's community in the future.

Mr D. J. Hindley, F.I.A. (replying)**:** We have the Government to thank, perhaps, for the fact that the actuarial RITC, including allowance for discounting and risk margins, received much comment in the discussion. In relation to the opener's point, which was shared by Mr Smith, that he would prefer it not to be labelled as the 'actuarial RITC', I would simply say that we used it for convenience purposes in the paper rather than anything else.

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The reference to discounting in the Budget papers was quite a surprise to many of us. It was perfect timing from the point of view of raising interest in our paper. I hope that this paper will ensure that actuaries play a major role in the consultation process in relation to the discounting issue.

Several speakers commented in various ways on the process for deriving the actuarial RITC. Although it has the advantage of being very easy to apply, I do not agree with the approach suggested by Mr Wright and others of reducing the discount rate to allow for the uncertainty in the cash flows. I think that this can lead to taking the easy option of assuming that the undiscounted reserve is broadly equivalent to the discounted reserve plus risk margin, referred to in ¶3.8.1. It is surely better, as again we suggest in the paper, to use a risk free matched rate to discount, and to consider the risk margin issues separately.

We accept that we only scratched the surface of quantification of risk margins in the paper, and that some of the suggestions made by the speakers should be explored further. I favour the use of DFA. I agree with Mr Chandaria, who said that it can be a time-consuming process. However, I think that this is partly because we are in the relatively early days of using DFA models. The time taken will reduce significantly when we have standard calibrations, for example, for the major classes written in the U.K. and elsewhere.

To respond to the question raised by Mr Ellis: "Do we add value over and above what is done at present?" I think that this is a complex issue. I think that actuaries can add value by exploring, in an explicit manner, the sources of uncertainty rather than assuming that there is an implicit offset. I agree with Mr Ellis when he says that there are other areas where actuaries can also add value, in pricing, for example. It is possible that, perhaps, actuarial involvement might have resulted in the reserves being recognised in insurers' accounts slightly earlier.

It seems to me that there is a reasonably strong case for using risk margins on top of discounted reserves, not least because to do otherwise appears, at least as I read it, to be inconsistent with the IASC fair value basis.

Mr Hinton asked whether or not actuaries should be involved in quantifying uncertainty, and how we would do that. My response to that would be that I agree with him that this would add value and that DFA models would produce these measures as a by product.

In relation to Mr Hart's point about equity, which was backed up by others, I agree that this is an important issue. In fact, I think that a two-sided reasonableness opinion on the actuarial RITC is one approach of helping to ensure that equity is achieved.

I now make a few remarks in relation to the Budget note on discounting, because I think that it is very topical and related in many ways to the paper. A great deal of detail needs to be agreed as to how the new rules will apply, including the opener's and Mr Sanders' point about the impact of borrowing and of the trust funds on the discount rate. The first point concerns the fact that the Budget note appears to imply some form of retrospective adjustment, whereby the tax authorities compare the discounted actual payment against the previously booked reserves. One would imagine that this could be quite time-consuming, and therefore expensive for the tax authorities to do for every insurer. Surely a better way is to define a basis for the reserving, perhaps akin to our actuarial RITC approach, which is agreed with the tax authorities, and which avoids the need for the retrospective adjustments to be made. Perhaps something like this is what is meant by the reference in the Budget note to allowing companies the new freedom to have only part of their provisions taken into account for tax purposes.

My second point also relates to the retrospective adjustment. It is simply to ask the question whether the tax authorities are also proposing to allow clawback by the insurer on tax that might have been paid if the booked reserves were less than the discounted actual payments, which I think would be fair.

A number of speakers commented on the quantification of risk margins. I do not think that anybody questioned whether they should be added at all. In relation to the method of quantification, I am grateful for the comments made on our suggested method and for the suggestions of alternative approaches, for example, that made by Mr Jones when he talked about downside scenario evaluation. I plan to explore, in more detail, the applications of the methods

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raised in the paper and other methods suggested in practice. I agree with Mr Hinton that there is no consensus on methodology. In fact, one of the purposes of the paper was to stimulate debate on methodology.

Some speakers touched on the fact that this was a very practical paper. Mr Craighead commented that he would have liked to have seen some examples. We never intended it to be a technical paper. We set out to explore a whole range of issues affecting the estimation of RITC which we thought would have wide appeal in the Lloyd's community. It would either have been a very long paper or we would never have finished it if we had included technical details. You have to remember that the paper was being prepared by a number of people who, themselves, were involved in reserving at Lloyd's during the period of production of the paper, which made meeting deadlines for the paper very difficult.

We concluded — and some speakers agreed with us — that the actuarial RITC is the best way forward from an actuarial point of view. I think that we can now move forward to more detailed research, as mentioned by Mr Ross and others, to back up the calculations of the actuarial RITC.

Mr Smith, perhaps unsurprisingly, mentioned financial economics. Financial economics is already being applied in the pensions field, and I do agree that it has an application to general insurance. However, for the use of financial economics to advance, two things need to happen. First, we need to demonstrate its practical application to general insurance to address real business questions. Second, more actuaries need to be trained in financial economics principles. These items need to be addressed before financial economics receives widespread acceptance and application in areas such as Lloyd's, where data and other issues demand a practical approach.

The concept of fair value was raised by Mr P. K. Clark, Mr Smith and others. Fair value is the value at which two knowledgeable, willing, arm's length parties would conduct a transaction. We have interpreted this largely as discounted best estimate plus risk margin. One might ask whether this is consistent with Lloyd's requirements for equity. The only possible area of difference that I can see, given that definition, is in the arm's length point, since the parties to the RITC transaction are in a special, closed relationship, which, if it did not hold, might mean that a different value would be arrived at. In other words, the market value at which the liabilities would change hands might be different if the RITC were put out into the open market.

However, I would argue that, for the RITC to be equitable, it still has to be equivalent to the fair value definition. This again leads us to something similar to the actuarial RITC approach. In relation to Mr P. K. Clark's point, I do not think that we were saying that actuarial RITC necessarily equates to fair value. We said that it is something similar to the actuarial RITC.

A few people, including the opener, Mr Wells and Mr Jones, raised the issue of actuarial opinions on RITC. Some thought that they would be a good idea and others did not. They might, perhaps, provide the safeguard for individual Names that Mr Wright referred to. Others did, though, think that they are a bad idea. A compromise would, perhaps, be to encourage the use of voluntary opinions on the RITC reserves rather than actuarial RITC, or possibly to amend the existing solvency basis to be a reasonableness one, rather than a one-sided one. I was not surprised that Mr Hinton said that he thought that that would be a bad idea. I did not understand his point that he was content with two-sided opinions, but did not like reasonableness opinions. So far as I can see, the example that he gave was, in fact, a one-sided opinion. It was greater than, but not significantly greater than, which, in my view, is just another form of a one-sided opinion.

Either of those sorts of opinions on the RITC reserves would go some way to helping with Mr Wright's safeguard, and could be implemented immediately with no further research on risk margins, etc. being required, as is clearly the case with the actuarial RITC. This two-sided basis will be consistent with the basis used for SAOs in other insurance markets, such as in the USA.

I agree with Mr Hart when he says that the ultimate responsibility for sign off of the RITC should lie with the underwriter and the managing agent rather than with the actuary. However, I do think that value can be added by having a professional opinion, for example from an actuary, on the figure that is signed off by those parties.

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Mr Jones commented that RITC is a complex and judgemental process. He used that as an argument for the non-involvement of actuaries. I would have thought that that is precisely the reason why we should be involved. Do we not want, as a profession, to be involved in complex and judgemental processes? I certainly do.

Mr Wells said that, if we give an opinion on the RITC reserves, then we might be formally supporting the RITC. I think that, if an opinion on the RITC reserves were worded appropriately, then it will be very clear to the reader of that opinion that the opinion was not on the RITC, but it was on the reserves underlying the RITC.

As to whether we can act for both parties, I think that point is becoming less relevant because of the very significant proportion of capital in the market that is supported by the same capital from one year to the next.

We make the comment in ¶5.6.2 that auditors do not opine on the RITC itself. I hope that it is also clear that actuaries do not opine on the RITC. So far as I can see at present, there is, therefore, no professional opinion on the RITC. I wonder whether all the investors in the Lloyd's market are aware of that.

The President (Mr P. N. Thornton, F.I.A.): This paper is very timely, not only because of the discounting proposals in the Budget, but also because it falls halfway through the consultation period for the IASC Basic Issues Paper on an insurance accounting standard. The profession has previously had opportunities at Sessional Meetings to discuss the implications of 'fair value' accounting for long-term insurance, but hitherto, apart from the Board Chairman's comments referred to in the paper, there has not been any corresponding discussion of the implications for general insurance.

The paper demonstrates that the profession is not afraid of taking on more responsibilities wherever we feel we can add more value. Also, as Mr Hindley has reminded us, it has served to remind practitioners that the current formal reserving role should not be assumed to cover an opinion on the appropriateness of the premium for RITC, which evidently has been causing some confusion.

As a profession, we are extremely grateful to Lloyd's for giving us our first significant statutory role in general insurance. I hope that the demonstration of the added value that we have provided in this market, together with the improvement in the quality of claims data produced for syndicates, will assist us in achieving our wider ambition for a formal role in the company market generally, which we fully realise we will only be given if we can show that we add value.

The role of the actuary in the U.K. is something of considerable interest outside the U.K. Other countries, particularly developing countries, look to the U.K. as a role model, and are extremely interested in the way in which actuaries work in the U.K. and the formal roles which they have. So, I particularly welcome the discussion on the question of equity and the role and responsibility of the actuary, where the line is drawn between the actuary's responsibilities and those of his or her clients, and the discussion that we have had about the ability of actuaries to take a two-sided view and 'hold the ring'. I welcome it, because these issues crop up in all of the areas in which actuaries practice, and the fact that we have such open discussions about these issues is extremely healthy for the profession.

I thank all those who participated, the authors, the opener, the closer and all of those who joined in the discussion. I ask you all to join me in thanking them.

WRITTEN CONTRIBUTION

Mr T. A. G. Marcuson, F.I.A.: My comments centre on the motivations for purchasers of actuarial services, particularly as applicable to the general insurance field. One of the speakers raised the question of why we (the profession) were raising this as a service offering, and I feel that this is an area where we have the potential collectively to lose our way if we are not careful.

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The two main areas where I feel that actuaries are able to advise on the process of setting the RITC are:

(1) technical assistance and decision support; and
(2) independent and impartial evaluation and reporting.

In this light, it seems apparent that, whether or not the annual venture continues, the value of these services remains, and indeed extends equally to insurance companies. Whether they are better supplied by an employed or a consulting actuary is also debatable. There are evident cases in which each would be better equipped to satisfy (1), while (2) may come down to cost.

I am very much of the opinion that there is considerable value to general insurers of making use of actuaries in their operations. Over time our collective aggregate skill set has expanded. The fact that now we are confident that the skills required to provide RITC opinions to the Lloyd's market are, or will shortly be, sufficiently widely available is an important step forward. However, we will need to take care that we are offering something more than actuarial reserve estimates plus arithmetic for our offering to be credible.

The areas of scientific approaches to discounting and risk loading readily present us with opportunities, but I fear that some refinement of techniques will be needed for a market-wide roll out. The debate on what constitutes correct discounts or loadings has only just begun, with a range of contexts and interests to be unscrambled. While views within the profession on what constitutes a valid approach differ so widely, we run the risk of opening ourselves up to the risk of 'actuarial arbitrage', where clients shop around for the opinion that portrays them most favourably, and the process descends into a form of Dutch auction. Further, there is the possible loss of credibility with other professionals in the field by using dated or invalid approaches in our work.

Turning to the service area of independent and impartial reporting, our professional training and ethos are intended to give us considerable support. Indeed, as a number of speakers pointed out, parallels with the Appointed Actuary role in life assurance spring to mind. Therefore, it is important that we consider the market for this service.

Company reporting is, at least in part, to do with overcoming the information asymmetries between management and other stakeholders in an enterprise. The asymmetry arises because managers have superior information of the business operations, and can, therefore, abstract wealth to the disadvantage of other stakeholders. Managers are motivated to prepare better information to improve the terms on which they contract their services to capital providers. This information constrains management actions, and hence limits their ability to abstract wealth. Other stakeholders, therefore, will be prepared to do business with them on more generous terms.

In insurance, publishing additional information relating to capital adequacy can, if favourable, improve the terms of trade on which insurers can operate. Taking this a step further, if the information is not published stakeholders may take the obvious negative inference.

The justification for an increased actuarial role is that management believes that, by doing so, it can improve its terms of trade. As each insurer is capable of making such cost-benefit decisions independently, making an actuarial role mandatory in a particular area would need to address a perceived failure of these individual decisions to reach an optimal level of usage. This may have been a motivating factor in Lloyd's introducing mandatory actuarial opinions, where one could understand management of one-year ventures having objectives conflicting with the long-term requirements of the central fund.

I think that, while we should promote the technical skills that we can offer and the benefits to general insurers of making use of actuarial services, we should proceed carefully with pressing for a statutory role, and allow this to come naturally over time. The success of an expanded mandatory actuarial role could be pyrrhic if the cost of its provision for small business units makes them non-viable and decreases the number of potential roles available. In this vein, I take issue with the authors' comments, in Section 8.3, that the differing requirements inside and out

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of Lloyd's over the use of actuaries could lead to a 'market arbitrage', as described. Rather, for insurers where broad-brush external reviews could portray them unfavourably, I would hope that actuarial skills are increasingly chosen in preference to communicate a fairer picture.

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