



**BOARD FOR ACTUARIAL STANDARDS**

**INSURANCE:  
CONSULTATION PAPER**

**SEPTEMBER 2009**

## FOREWORD BY THE CHAIRMAN

The last 12 months have been one of the most turbulent in recent history for the financial services industry. At the point of writing, many commentators are suggesting that the worst is behind us, but I think that the scars left will be affecting us for many years to come. Of course it is the banking industry that has been most troubled, but there are many lessons for the insurance industry as well.

The insurance TAS, the fifth to be kicked off by the BAS, aims to play its part in our national response to these recent issues by ensuring that the standards applied by actuaries in presenting work to their clients and employers are high, and that the work is indeed relevant, transparent, complete and comprehensible. This last has always struck me as most important. Too many times over the years have I heard actuarial work described as a “black box”, and the parallel with the banking industry producing products where the risks were too complex even for experienced bankers to understand is uncomfortable.

Actuarial work is, by its nature, forward looking and there are many plausible projections of the future. It is not the intent of this TAS to pretend that better work can produce more accurate singular answers – that is to misunderstand the issue – but rather to establish principles whereby actuaries should explain the texture of the “spray” of possible answers in a way that enables good practical decision making by their users. We suspect that actuaries should place more weight on explaining projected cash flows, for example, rather than expecting users to grasp the “magic of compound interest” that sits within discounted values, and we are very interested in the feedback we get on this subject.

Better risk management is clearly required in the insurance industry, as well as the banking industry, and this is another focus of this consultation paper. Actuaries are central to good risk management and we certainly hope to provide a framework that allows Risk Committees to better understand their risks and their choices for action. We look forward to feedback on this as well.

Lastly, one of our debates has been whether it is appropriate to have one TAS for both the life and general insurance industries. The life industry is focused on investing rather than coverage, and the reverse is true for the GI industry. On balance, the Board felt that we should propose a single TAS, because the commonalities were bigger than the differences, and because other regulatory developments are heading in this direction, but we welcome input on this subject.

The BAS has the challenge of creating something new, and the Director and her team have a big subject in view in the insurance TAS. We look forward to hearing from as many users and actuaries as possible.

Jim Sutcliffe  
September 2009

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# 1 INTRODUCTION

## BACKGROUND

- 1.1 The Board for Actuarial Standards (the BAS) is responsible for setting technical actuarial standards in the UK. It is an operating body of the Financial Reporting Council (the FRC).<sup>1</sup>
- 1.2 The BAS is developing a new set of Technical Actuarial Standards (TASs), as it proposed in its consultation paper on the *Structure of new BAS standards*.<sup>2</sup> There will be three Generic TASs, applying across a wide range of actuarial work, on *Data, Modelling and Reporting Actuarial Information*. There will also be a number of Specific TASs, applying to work in particular areas such as insurance, pensions and business rearrangements. This document sets out proposals for a Specific TAS on insurance.
- 1.3 The BAS has published its *Conceptual Framework for Technical Actuarial Standards* and *Scope & Authority of Technical Standards (Conceptual Framework and Scope & Authority)*. Its standards will be outcome-focused and principles-based, and will be developed through a fully consultative process. This document, a consultation paper, will be followed by an exposure draft of the insurance TAS which will also be subject to public consultation.
- 1.4 In the UK, insurance business is conducted (or written) primarily by insurance companies, friendly societies and Lloyd's syndicates. In the remainder of this paper we use the term "insurers" to refer to these businesses. UK legislation also distinguishes between long-term and general insurance contracts. We use the terms "long-term insurance" and "general insurance" for the two types.

## AUDIENCE AND AIMS OF THIS DOCUMENT

- 1.5 This document has been written for anyone who is likely to be affected by the standard that the BAS intends to publish on insurance. The intended audience includes actuaries, directors and managers of insurers, regulators, policyholders and their advisers, and other users of actuarial information.
- 1.6 The primary purpose of the proposed insurance TAS is to ensure that actuarial information gives the best possible support to those who use the information to make decisions based on it. We intend the insurance TAS to be durable: it will therefore contain few references to legislation and regulations (which may change over time). This means that the proposed insurance TAS will have a very different look and feel to the Guidance Notes (GNs) which we adopted from the Actuarial Profession. The transition from the GNs to the new insurance TAS is considered in section 9.

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<sup>1</sup> The Financial Reporting Council is the UK's independent regulator responsible for promoting confidence in corporate reporting and governance.

<sup>2</sup> All the BAS's publications are available from its website at <http://www.frc.org.uk/bas/publications>.

- 1.7 Our discussion of scope in section 4 of this paper considers areas of actuarial work that could be covered by the insurance TAS. The scope decisions are of key importance, since work within the scope of the insurance TAS will be automatically included in the scope of the Generic TASs by virtue of the Schedule to the *Scope & Authority*.
- 1.8 In sections 5 to 8 we consider the question of what additional principles should apply to insurance beyond those that appear in the Generic TASs. In some cases the additional principles cover ground similar to those in the Generic TASs, but with a greater emphasis on particular insurance-specific points.
- 1.9 This document does not revisit decisions on which we have previously consulted and that are discussed in other BAS documents.
- 1.10 This document proposes a number of principles for inclusion in the BAS's insurance TAS. However, it is by no means an exposure draft of the proposed TAS, and the proposals are intended to convey more the general sense of the requirements that may appear in the TAS than the precise words that are likely to be used, or the precise structure that the standard is likely to take.
- 1.11 We would welcome views on the matters addressed in this document, and in particular on the questions listed at the end of each section and collated in section 10. The responses that are received will inform our thinking as we develop an exposure draft leading to a Specific TAS on insurance.

## **ACTUARIAL WORK IN INSURANCE**

- 1.12 The origins of actuarial science lie in life insurance and annuity business. Over time, actuaries have moved into the pensions field, investment related activities and, more recently, general insurance. The visibility of actuarial work in insurance is increasing rapidly as the spotlight falls on all financial institutions, especially in relation to the management, assessment and reporting of the risks and uncertainty they face.
- 1.13 Long-term insurance (sometimes called life assurance or life insurance) comprises any financial contract (known as a policy) which is contingent upon life, whether through death or survival. As well as life insurance policies and annuities, it includes many types of pensions contracts, and some types of policies that are contingent upon sickness, disability or long term care needs. A wide range of contracts is available. However, all long-term business involves payment of premiums to the insurer; the investment by the insurer of those premiums after allowance for its selling and other costs; and payments of claims whether on death, some other contingency or survival to an agreed age, or as an annuity or pension; or in some cases payment of a surrender benefit in the case of early termination by the policyholder.
- 1.14 General insurance (sometimes called non-life insurance or property and casualty (P&C) insurance) provides protection or indemnity from the financial consequences of a wide range of risks other than life, although some of the risks covered also depend on contingencies related to survival. A wide range of risks can be insured, and the risks inherent in most aspects of our lives such as employment, travel and transport, health and housing, as well as many business activities, can be reduced through insurance. Most policies

provide cover for one year, although some policies such as travel insurance are for more limited periods or events, and some claims, particularly for liability protection cover, may emerge a significant time after the period of cover because of reporting delays or there may be a significant time between notification and settlement as the ultimate cost is established.

- 1.15 The primary focus of actuarial work in insurance is, unsurprisingly, risk, and in particular the exposure of the insurer to risk through its liability to pay claims. In practice, this means that much actuarial work in insurance concerns the analysis, projection and mitigation of risks arising from insurance contracts. These risks are governed by economic factors (market risk such as changes in interest rates and asset prices, credit risk such as changes in default rates), uncontrolled events (insurance risk such as mortality, morbidity, property losses and liability claims) and policyholder behaviour (such as lapses).
- 1.16 This emphasis on the projection of future events means that there is uncertainty in the results of actuarial work and that actual results will generally differ from those projected, sometimes significantly. Poor communication in the past about this uncertainty has given rise to dissatisfaction with actuarial work. We intend our standards to ensure that actuarial information clearly conveys to its users the likely size and impact of the variability in results and in particular avoids obscuring projected cash flows by the impact of discount rates.
- 1.17 Both the financial management of insurers and their reporting to shareholders, regulators and others rely to a large extent on actuarial information. Insurance liabilities are one of the main focuses of corporate and regulatory reporting, and capital requirements depend heavily on insurance liabilities and the risks within them. Investment strategy is driven by the need to meet the liabilities as they fall due. Other aspects of financial management in which actuarial information is used include risk management, business planning, reinsurance analysis, and information to policyholders.
- 1.18 Risks to insurers occur in many forms and at various levels, from operational and underwriting, through modelling and technical analysis, to strategic and corporate issues.
- 1.19 Actuarial information is also used in relation to transactions with policyholders and others, including product design and pricing, setting surrender values, and in the exercise of discretion such as setting bonus rates for with-profits policies.
- 1.20 Legislation and regulation give rise to some roles and some individual pieces of work which can be performed only by suitably qualified actuaries. These are discussed further in section 4 and Appendix A.
- 1.21 The FRC's discussion paper on *Promoting Actuarial Quality*<sup>3</sup> discusses the nature of actuarial work in insurance in more detail, as does Appendix A of this paper.

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<sup>3</sup> Available from <http://www.frc.org.uk/pob/actuaries/drivers.cfm>.

**ONE TAS OR TWO?**

- 1.22 A key structural question is whether there should be separate TASs for long-term and general insurance or a single TAS covering both.
- 1.23 Although actuarial information is used for the same overall purposes in both long-term and general insurance, there are many differences in the detail of how the actuarial work is performed. The differences arise from differences in the underlying risks as well as from differences in regulation and business practice.
- 1.24 The main difference is, of course, that long-term insurance policies may last for several decades, with premiums being receivable over part or all of the term, while general insurance policies usually provide cover only for one year. In addition, there are many issues, mostly concerning the exercise of discretion, that arise in the conduct of with-profits business for which there are few parallels in general insurance. Because of the differing nature of the liabilities, different actuarial techniques are used to analyse them. Different considerations also come into play when analysing the risks and considering the interactions between the assets and liabilities.
- 1.25 On the other hand, there is also much heterogeneity within each type of insurance. Long-term insurance includes simple term insurance, which pays out only on the death of the policyholder within the specified term, as well as complex investment related products. General insurance covers a range of contracts from personal lines insurance, for which the policy terms are standardised and which is written in large volumes (thus providing plenty of data) to bespoke contracts covering individual large commercial risks and reinsurance treaties. Moreover some general insurance, such as product liability insurance, extends over the very long term. Health insurance may be written as either long-term or general business, depending on the precise policy conditions. The principles of asset-liability modelling are the same in all areas of insurance.
- 1.26 The core area of actuarial work in both types of insurance is the assessment of insurance liabilities and their variability. This type of assessment involves the projection of many different economic and demographic variables which affect the future financial position of the insurer.
- 1.27 In addition, the underlying principles that govern actuarial work in insurance are much the same for both branches. Data is gathered and analysed, suitable assumptions and methods chosen and rationalised, calculations performed and checked, and the results documented and explained to the user of the information. Since we intend to issue principles-based rather than detailed and prescriptive standards, we believe that it is possible to encapsulate the underlying principles in our standards in a way that applies across the whole range of insurance work.
- 1.28 In general, there is an increasing tendency for regulation to treat the two types of insurance in the same way. For example, the FSA's *Prudential Sourcebook for Insurers*, which sets out the current solvency regime for insurers, applies to both long-term and general business, although some aspects of the content have greater importance for one branch than for the other. The EU Solvency II directive, which prescribes the new solvency

regime which will apply from 31 October 2012, also applies to both types of insurance. Likewise, IFRS are not issued separately for the two types.

- 1.29 We are proposing to issue a single TAS for insurance, but would welcome respondents' views on whether separate TASs for long-term and general insurance would result in more reliable actuarial information for users.
- 1.30 For simplicity we refer throughout the paper to an "insurance TAS", in the singular, without prejudice to the final decision.

## CONTENTS AND STRUCTURE OF THIS CONSULTATION PAPER

- 1.31 The Generic TASs on *Data, Modelling and Reporting Actuarial Information* (TAS D, TAS M and TAS R) set out principles which apply to all the principal areas of actuarial work. The Specific TASs will build on the foundation laid by the Generic TASs. They will set out the work to which they will apply and will contain principles covering how that work should be performed. By virtue of the BAS's *Scope & Authority* that work will also have to comply with the Generic TASs.
- 1.32 We consider the purpose of the proposed insurance TAS in section 2. Section 3 discusses some general concepts and section 4 its scope.
- 1.33 Sections 5 to 8 consider possible principles that the insurance TAS might contain together with their underlying rationale. The sections cover principles concerning data, assumptions, modelling and reporting respectively. Where possible we have identified principles which are applicable across all areas of actuarial work in insurance; these are considered at the start of the relevant section. For some areas of work within insurance there may be little or nothing that the proposed insurance TAS needs to add to the Generic TASs.
- 1.34 Section 9 considers the transition from the adopted Guidance Notes to the new insurance TAS.
- 1.35 Appendix A outlines and discusses the main areas of activity for actuaries in insurance.

## RESPONSES TO THIS CONSULTATION PAPER

- 1.36 Details of how to respond to this paper are set out in section 10. Comments should reach the BAS by **20 November 2009**.

In paragraphs 1.22 to 1.30 we discuss whether there should be a single TAS covering both life and general insurance, or whether there should be two separate TASs.

- 1. Respondents are asked to comment on the advantages and disadvantages of a single insurance TAS compared with separate TASs for long-term insurance and general insurance, with particular reference to the needs of the users of actuarial information.**

## 2 PURPOSE

### INTRODUCTION

- 2.1 Our *Conceptual Framework* states that each TAS will set out its purpose. In this section we propose a purpose for an insurance TAS and discuss its application. We also discuss the departures that will be permitted by virtue of our *Scope & Authority*.
- 2.2 The insurance TAS will specify the scope of insurance work to which the generic TASs will apply. It will also provide additional principles specifically for insurance work to supplement the principles in the Generic TASs.

### PURPOSE OF THE INSURANCE TAS

- 2.3 The overall purpose of all BAS standards is that the users for whom a piece of actuarial information was created should be able to place a high degree of reliance on the information's relevance, transparency of assumptions, completeness and comprehensibility, including the communication of any uncertainty inherent in the information. This is the BAS's Reliability Objective, and is set out in the *Scope & Authority*<sup>4</sup>.
- 2.4 Users frequently use the term "black box" to describe the nature of actuarial work. This phrase carries a negative connotation, undermines the value users receive from the work, and implies that their decisions are likely to be sub-optimal. We believe that the insurance TAS should not only require accurate calculations, but also encourage better and more transparent communication of actuarial information.
- 2.5 As discussed in section 1, the primary users of actuarial information in the insurance area are managers and members of governing bodies of insurers. Actuarial information plays a vital role in their decisions about business.
- 2.6 In some types of insurance, insurers exercise discretion over the benefits to be paid to policyholders or the charges to be borne by them. The decisions about how this discretion should be exercised are supported by actuarial information, which covers the implications both for the insurer and, in some cases, for the policyholders, who are thus indirect users of actuarial information.
- 2.7 Policyholders, their advisers, and independent financial advisers may also be direct users of actuarial information. For example, some long-term insurers are required to have a With-Profits Actuary who must report on certain matters to policyholders (see paragraphs A.9 to A.10). Policyholders may also make decisions about their policies based on actuarial information such as the amount they might receive as a surrender value.
- 2.8 There are three areas of information that we believe are particularly important in insurance: risk and uncertainty, cash flows and the exercise of discretion.

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<sup>4</sup> *Scope & Authority of Technical Standards* paragraph 8.

- 2.9 First, actuarial information should include sufficient material about risk and uncertainty. Risk lies at the very heart of insurance, and any actuarial information is, by its very nature, subject to uncertainty. The future can never be known precisely, and it is important that the users are aware of the extent of the uncertainty in the information on which they base their decisions.
- 2.10 Second, much actuarial information in insurance is concerned with future cash flows. It is these cash flows, which include premiums and investment income received, investments purchased and sold, claims and benefits paid, costs incurred and reinsurance premiums paid and recoveries received, that constitute the business of insurance. An insurer must be able to meet its outgoings as they fall due. It is therefore important that information concerning cash flows is of high quality and well communicated so that it is understood by the users.
- 2.11 Third, actuarial information sometimes supports decisions that affect policyholders directly through the exercise of discretion. For example, insurers may declare bonuses for their with-profits business, or may vary the charges applied to classes of policies. In these circumstances it is important that the implications for policyholders are considered, including the effects on different groups of policyholders.
- 2.12 We are therefore proposing that the purpose of the insurance standard should be to facilitate the achievement of the Reliability Objective by ensuring that in the performance of work within its scope:
- a) managers and governing bodies of insurers are provided with sufficient relevant and comprehensible information to support decisions about the business;
  - b) managers and governing bodies of insurers are provided with sufficient information to support decisions that affect policyholder benefits or charges and to enable them to understand the implications for policyholders;
  - c) policyholders are provided with sufficient information to support their decisions about their insurance policies;
  - d) actuarial information conveys clearly the extent of the risk and uncertainty in the results it contains;
  - e) in the assessment of future cash flows the key issues that affect their variability or their discounted value are taken into account and given the appropriate weight; and
  - f) calculations are accurate, are carried out using methods which are fit for purpose, and use appropriate assumptions.

## **APPLICATION**

- 2.13 The insurance TAS will apply to certain actuarial work in relation to insurers. It will not apply to work carried out in relation to pre-paid funeral plans, which will be covered by a separate TAS.

## REGULATION AND THE INSURANCE TAS

- 2.14 Our goal is to create a TAS that, when applied by responsible and competent professionals, will promote the provision of high quality actuarial information in insurance and will increase the confidence users have in their actuarial reports. We do not intend to develop a TAS that relies on the existence of other regulation for its force.
- 2.15 From 31 October 2012 the UK insurance industry will be subject to the requirements of Solvency II, the new system of European prudential insurance regulation. Our discussion in this consultation paper takes place in that context. We do not intend to develop a standard that addresses only the current regulatory regime. Although many of the details of Solvency II have yet to be determined, the general outline is now clear.

## DEPARTURES

- 2.16 The permitted or required departures from compliance with TASs are set out in full in paragraphs 20 to 24 of the BAS's *Scope & Authority*.
- 2.17 Paragraphs 22 and 23 of the *Scope & Authority* explain that departures that have an immaterial effect on the work being performed need not be considered as departures and need not be disclosed. A departure should be considered material if, at the time the work is performed, the effect of the departure (or the combined effect if there is more than one departure) could influence the decisions to be taken by the intended recipients of the work product.
- 2.18 Paragraph 24 of the *Scope & Authority* explains other possible departures, of which the most important is that departure is required in the extremely rare circumstance that compliance would conflict with the Reliability Objective.
- 2.19 The *Scope & Authority* sets out the disclosures that are required in the event of any departure.

In paragraph 2.12 it is proposed that the purpose of the insurance TAS will be that:

- a) managers and governing bodies of insurers are provided with sufficient relevant and comprehensible information to support decisions about the business;
- b) managers and governing bodies of insurers are provided with sufficient information to support decisions that affect policyholder benefits or charges and to enable them to understand the implications for policyholders;
- c) policyholders are provided with sufficient information to support their decisions about their insurance policies;
- d) actuarial information conveys clearly the extent of the risk and uncertainty in the results it contains;
- e) in the assessment of future cash flows the key issues that affect their variability or their discounted value are taken into account and given the appropriate weight; and
- f) calculations are accurate, are carried out using methods which are fit for purpose, and use appropriate assumptions.

**The BAS would welcome responses to the following question:**

2. **Will the proposed purpose of the insurance TAS that is set out in paragraph 2.12 help to ensure that users of actuarial information can place a high degree of reliance on its relevance, transparency of assumptions, completeness and comprehensibility?**

## 3 GENERAL CONCEPTS

### INTRODUCTION

- 3.1 In this section we consider several issues which are relevant to all areas of actuarial work. These have been covered in more detail in the previous consultations on the Generic Standards and in our *Scope & Authority*.

### MATERIALITY

- 3.2 Materiality is a vital concept in the context of TASs. The *Scope & Authority* states that a failure to follow the principles in this standard need not be considered a departure if it does not have a material effect<sup>5</sup>. In the consultations on the Generic TASs we have covered materiality in depth and we do not intend to cover the same ground in this paper. We intend to use the same definition in the insurance TAS as that proposed in the exposure drafts of TAS D and TAS M:

A matter is material if, at the time the work is performed, it (or information resulting from it) could influence the decisions to be taken by users. A matter that is immaterial when considered in isolation may be material when considered in conjunction with others.

### PROPORTIONALITY

- 3.3 We are committed to proportionate regulation, and have borne in mind the cost of applying our standards in developing the proposals in this paper. We also recognise that our standards should not encourage those seeking to comply with them to perform work that does not provide benefit to the users of the resulting actuarial information. Our standards will be drafted so that compliance will not require disproportionate work.
- 3.4 Some practitioners have suggested in their responses to consultations on the Generic TASs that, for smaller assignments, compliance with our TASs may lead to additional work with no benefit to users. In particular it has been argued that in order to comply with TAS R practitioners would prepare longer reports resulting in extra costs being incurred. This is not our intention. Indeed we believe that in many cases long reports may not comply with TAS R as they may contain unnecessary details which would obscure the material information.
- 3.5 We expect that those complying with our standards will exercise their judgement in determining what a report should contain and then document the rationale for determining the contents of the report. We believe that the process of considering what should be in a report, and what should be omitted, will result in improved information for users.

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<sup>5</sup> Paragraph 23 of the *Scope & Authority*.

## APPLICATION OF JUDGEMENT

- 3.6 The way in which the principles set out in a TAS are applied is a matter for judgement by those responsible for the preparation of actuarial information. In particular, it will often be necessary to make judgements about what is, or is not, material or proportionate.
- 3.7 We intend to include the following principle in the insurance TAS:
- Judgements concerning the application of this standard shall be exercised in a reasoned and justifiable manner.
- 3.8 Our other TASs will include the same principle. In due course we may choose to amend our *Scope & Authority* to cover this.

## 4 SCOPE

### INTRODUCTION

- 4.1 The exposure drafts of the Generic TASs contain requirements which will apply to all actuarial work within their scope, which includes all work within the scope of the insurance TAS. In this section we discuss what work should fall within the scope of the insurance TAS. The work that is considered consists of actuarial work for insurers, whether they write long-term or general business. It thus covers life insurance, health insurance, and all forms of general insurance.
- 4.2 The rationale for bringing work within the scope of our TASs is described in paragraphs 4.5 to 4.12. Actuarial work in insurance and actuarial roles defined by regulation are discussed further in Appendix A. The following areas of work are discussed in the remainder of this section:
- functions principally related to reporting (paragraphs 4.14 to 4.27);
  - functions principally related to financial management (paragraphs 4.28 to 4.50); and
  - other functions (paragraphs 4.51 to 4.71).
- 4.3 In paragraphs 4.72 to 4.76 we summarise our proposals.
- 4.4 Some types of actuarial work, such as the preparation of information to be used in financial statements, may be within the scope of future TASs. This does not rule out bringing such work into the scope of the insurance TAS as different aspects of some types of work may be covered in separate Specific TASs.

### RATIONALE

- 4.5 Our overriding concern when considering the scope of our standards is our Reliability Objective, which is that users of actuarial information can place a high degree of reliance on its relevance, transparency of assumptions, completeness and comprehensibility, including the communication of any uncertainty inherent in the information. In looking at work in the area of insurance, we consider particularly the degree of reliance that management and governing bodies of insurers, or policyholders, might wish to place on the information resulting from the work. We also consider whether there are areas in which the decisions that these potential users could make need not be based on actuarial information.
- 4.6 A number of factors will influence our decision.
- 4.7 We are more likely to include work within the scope of our standards if the users of the work are relying on the fact that it has been performed by an actuary (rather than by someone who is not an actuary). This means that, for example, work that is required to be performed by actuaries is, other things being equal, likely to be within scope. In certain areas, FSA rules require insurers themselves, rather than just their actuaries, to undertake work in

accordance with generally accepted actuarial practice, which implies compliance with BAS standards.

- 4.8 Reserved Work and Required Work are defined in paragraphs 15 to 19 of the *Scope & Authority*. Reserved Work is work carried out in order that the entity commissioning the work complies with regulations, or with some other legal obligation, that require the entity to have the work carried out (or make certain outcomes conditional on the work having been carried out). Reserved Work is Required Work for which the regulations or other legal obligation require the entity in question to commission the work from an individual who holds a prescribed actuarial qualification (usually Fellowship). We have proposed in the exposure draft of TAS R (published in March 2009) that all Reserved Work should be within the scope of our Generic TASs.
- 4.9 There are many types of work that are performed by actuaries but do not have to be. In some cases the work is nearly always performed by actuaries; in others, only rarely. We are more likely to include the former type of work within the scope of our standards because users are more likely to rely on the fact that it has been performed by an actuary. We aim to produce standards that will be a benchmark for the work concerned, regardless of who actually performs it – a member of the Actuarial Profession or not. Enforcement of these standards for actuaries is the responsibility of the Actuarial Profession; for others it will be the courts.
- 4.10 When considering whether work should be within the scope of our standards, we take into account the importance that the actuarial information has for the decisions made by users. The more important it is, the more likely it is to be within scope.
- 4.11 We consider distinct areas of work (such as pricing or liability assessment) rather than distinct roles (such as the Actuarial Function Holder in a long-term insurer). We wish to target the areas in which standards will have the most beneficial effect, and we will take into account the extent to which compliance with standards would be proportionate.
- 4.12 In summary, the factors we will take into account when deciding whether to include an area of work within the initial scope of the insurance TAS are:
- the degree of reliance likely to be placed on the work;
  - whether users rely on its having been performed by an actuary or in accordance with actuarial standards;
  - whether it is Reserved Work;
  - whether it is work that is usually performed by an actuary; and
  - the importance of the actuarial information for the users' decisions.
- 4.13 In the remainder of this section we discuss areas of work that we are proposing to include or exclude from the initial scope of the insurance TAS, taking these factors into account. The scope of the TAS will be reviewed periodically following publication.

## REPORTING FUNCTIONS

### Insurance liabilities for regulatory reporting

- 4.14 The principal area of Reserved Work in insurance is the determination of insurance liabilities<sup>6</sup> for regulatory reporting by insurers writing long-term insurance business and by Lloyd's syndicates. This work is performed by Actuarial Function Holders, Appropriate Actuaries, Lloyd's Syndicate Actuaries, and Reporting Actuaries (as defined in Actuarial Profession Guidance Note GN7).
- 4.15 For general insurance companies the determination of insurance liabilities for regulatory reporting purposes is not Reserved Work. However, it is an area in which actuaries are heavily involved. Under Solvency II the determination of liabilities is likely to fall within the remit of the actuarial function for both long-term and general business.
- 4.16 Because of the significance of this work to insurers, we propose to include the determination of insurance liabilities for regulatory reporting by insurers within the scope of the insurance TAS.

### Insurance liabilities for Companies Act financial statements

- 4.17 The insurance liabilities that appear in an insurer's financial statements, and those appearing in tax returns, have a close relationship to the insurance liabilities reported in the regulatory returns. According to the Companies Act 2006, long-term liabilities must be computed by a qualified actuary (see Appendix A paragraphs A.23 to A.24). Auditors usually also rely on actuaries in expressing their opinion on these statements. It is also likely that, in the near future, actuaries may be involved in expressing opinions on the insurance liabilities appearing in tax returns for general insurance business.
- 4.18 This work has much in common with the determination of insurance liabilities for regulatory reporting. Because of its significance to insurers, we propose to include assessing insurance liabilities and work for auditors on insurance liabilities for statutory financial reporting purposes (other than regulatory reporting) within the scope of the insurance TAS.
- 4.19 Insurers conducting long-term insurance business are required by regulation to ensure that their auditor takes advice from an actuary who is independent of the insurer. This actuary is known as the Reviewing Actuary, and is required to consider the Actuarial Function Holder's investigation and report. The Reviewing Actuary's work may, by agreement with the auditor, also cover other matters.
- 4.20 As the role involves reviewing the work of another actuary it is not Reserved Work<sup>7</sup>. However, the work performed by the Reviewing Actuary may involve a very significant amount of original or independent actuarial work, on which great reliance is placed by the auditor. In general insurance the auditor usually also relies on work performed by actuaries independent of the insurer although no specific actuarial role is defined by regulation. In

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<sup>6</sup> We include the determination of the With-Profits Insurance Capital Component (WPICC) in this.

<sup>7</sup> Paragraph 18 of the *Scope & Authority*.

view of the degree of reliance placed on actuarial work for the auditor that concerns an insurer's determination of insurance liabilities for regulatory reporting purposes, we propose to include it within the scope of the insurance TAS.

#### **Other Information for financial statements**

- 4.21 Paragraphs 4.14 to 4.20 explain our proposals that the assessment of insurance liabilities for regulatory, shareholder and tax reporting purposes should be within the scope of the insurance TAS. There are other aspects of financial reporting that are supported by actuarial information, including information on any employee pension scheme and Embedded Values (EVs) that are shown as supplementary information in the annual reports and accounts of long-term insurers. EVs may also be used in the determination of performance related pay.
- 4.22 The EV is the sum of the net asset value and the present value of business in force, and is often regarded as a key component of the overall value of life insurance companies. The calculation of an EV relies heavily on actuarial information, especially in the calculation of the value of the business in force.
- 4.23 We intend to cover both the information on employee pension schemes and the calculation of EVs for accounting in our forthcoming TAS on actuarial information for financial statements. However, as EVs are of such importance to both insurers and investors, and the work of producing them has so much in common with other work that is likely to be within the scope of the TAS, we propose to include the work of preparing EVs for financial statements within the scope of the insurance TAS.

#### **Regulatory capital assessment**

- 4.24 As well as determining liabilities, the Actuarial Function Holder of a long-term insurance company is required to advise on the capital needed to support the business. More generally, assessment of the capital requirements of an insurer is required by the FSA as part of its ICAS (Individual Capital Adequacy Standards) regime. It is usual for actuaries to be heavily involved in the preparation of a firm's Individual Capital Assessment (ICA), which is a primary component of the overall regulatory capital requirement.
- 4.25 We anticipate a similar degree of actuarial involvement in the assessment of capital requirements under Solvency II, whether through the application of the standard formula in order to calculate the Solvency Capital Requirement (SCR), Minimum Capital Requirement (MCR), or Own Risk Solvency Assessment (ORSA); or through the development and management of internal models and stress and scenario tests. Although under Solvency II responsibility for the internal models and their output will lie with the risk function, the actuarial function will be required to contribute to their implementation. It is possible that in many cases much of the risk function will, in any case, be performed by actuaries.
- 4.26 In addition, regulators may ask firms for additional information for use in the calculation of Individual Capital Guidance (ICG) under the current regime or capital add-ons under Solvency II. In both cases actuaries are likely to be involved in preparing this information.

- 4.27 Management and governing bodies of insurers and regulators place a high degree of reliance on actuarial information when determining regulatory capital requirements. Accordingly we propose to include the assessment of regulatory capital requirements within the scope of the insurance TAS.

## **MANAGEMENT FUNCTIONS**

### **Planning**

- 4.28 Business planning places reliance on appraisals of past business performance to forecast how performance may continue in the future: a process which may require the use of a wide range of actuarial information. Governing bodies and management of insurers should be able to rely on the actuarial information that is used in making planning decisions and for this reason we propose to include the actuarial information used in business planning within the scope of the insurance TAS.
- 4.29 We seek the views of respondents on any practical difficulties there may be in determining the boundary between the information and the decision, and on its significance to the governing bodies and management of insurers.

### **Non-regulatory capital assessment**

- 4.30 Capital assessment may also be performed for a number of non-regulatory purposes, including where:
- an insurer believes that the economic capital required to fulfil its business strategy is different from its regulatory capital requirements;
  - actuarial confirmation of capital adequacy is often required in order to pay a dividend;
  - a strategic planning exercise involves considering future capital requirements in the context of maximising measures of shareholder value such as return on equity or achieving a desired rating from rating agencies; and
  - capital requirements are assessed in the course of planning outward reinsurance programmes or balancing the merits of reinsurance and other ways of managing risk.
- 4.31 The overall capital requirement (either economic or regulatory) is sometimes allocated between product lines (or other business divisions) in order to measure relative performance through such measures as return on equity. The results may be used in planning future business developments, in determining performance related pay (see paragraph 4.47), or for other purposes.
- 4.32 We have no intention of bringing the actual decisions within the scope of the insurance TAS, but we are considering whether the information on which they are based should be covered by our standards. We would be interested in the views of respondents. We would be especially interested in the views of members of governing bodies and senior management of insurers on the extent to which they rely on actuarial information when making their decisions on these matters.

## **Business transactions**

- 4.33 Actuarial information is used in a number of situations connected with transactions and the raising of capital. In some cases the information is prepared for one of the parties involved; in others it is prepared by an independent expert.

### *Information for a single party*

- 4.34 Actuarial information is often used in due diligence exercises performed for one of the parties involved in company mergers and acquisitions. For transactions involving long-term business this includes assessments of the present value of the business in force which forms part of the embedded value and the profitability of new business, which are often important pieces of information in the determination of the price. In general insurance, the value of insurance liabilities may well be the most financially significant element of such a transaction.
- 4.35 Actuarial information may also be used in capital raising activity related to insurance such as demutualisation, securitisation and IPOs. Work may include assessing the value of the business in force, performing scenario tests on future cash flows, or opining on the value of insurance liabilities. Sometimes this type of actuarial information, although prepared for one of the parties, is used in public documents that may be relied on by others.
- 4.36 Another type of transaction in which actuarial information may be used is the commutation of an insurance policy, in which an uncertain policy liability between two or more parties is contractually replaced by a specified immediate payment or payment stream. Each party to the transaction typically uses actuarial information in deciding on the terms of the transaction.
- 4.37 Even though many such transactions are essentially commercial decisions, there are potential consequential effects on parties such as policyholders and shareholders. We believe therefore that the reliability of the actuarial information used is important.
- 4.38 In many cases work connected with transactions is carried out within very short timescales and without access to complete data. It has been suggested that it would be difficult for such work to comply with our standards, because of the intense time constraints under which information is provided.
- 4.39 We believe, however, that it is important that decision makers are fully aware of any shortcomings in the information that they use. Our TASs require full explanations of risk and uncertainty, and of any limitations of the data that has been used or calculations that have been performed. Such limitations are likely to be especially significant when work is subject to tight time constraints. We therefore believe that compliance with our standards would be not only possible but particularly relevant. In most cases, the requirements in our TASs are deliberately flexible, allowing either qualitative or quantitative analyses, and requiring the exercise of judgement in the level of detail presented.
- 4.40 We seek views on whether work performed for one of the parties involved in a merger or acquisition, commutation or capital raising exercise should be

within the scope of the insurance TAS. We ask respondents to consider the extent to which such parties should be able to place reliance on actuarial information, and whether different considerations apply to work that results in information that is made publicly available.

#### *Reinsurance to close for Lloyd's syndicates*

- 4.41 Three years after the inception of an underwriting year (year of account), the managing agent of a Lloyd's syndicate may decide to close the year. The liabilities of the year to be closed are transferred into (usually) the succeeding open year, and a premium is paid to that year. This process enables an underwriting result to be calculated for the closed year. The premium transferred is known as the reinsurance to close. In practice this premium is generally derived from the solvency reserves calculated for statutory purposes.
- 4.42 We believe that the actuarial work performed in support of the setting of the premium for reinsurance to close should be within the scope of the insurance TAS, as it has much in common with the assessment of liabilities for regulatory purposes, and affects the extent to which successive generations of capital providers receive fair treatment.

#### **Investment**

- 4.43 Many actuaries provide investment related work for insurance companies. The work is wide ranging, including investment management and analysis, and investment performance monitoring. However, by no means all or even most investment work is carried out by actuaries and it is not always clear what work is actuarial and what is not. We are therefore currently not inclined to include the majority of investment work within the scope of the insurance TAS, but may consider introducing a specific TAS on investment in the future.
- 4.44 Asset-liability modelling (ALM) is an actuarial technique used in risk management with particular application to market, liquidity and insurance risk. We believe that it is important that regulators and the management and governing bodies of insurers can place a high degree of reliance on ALM. Accordingly we propose to include ALM within the scope of the insurance TAS.

#### **Opinion on underwriting policy and reinsurance arrangements**

- 4.45 Under Solvency II the actuarial function will be required to provide an opinion on the underwriting policy and reinsurance arrangements of regulated insurers.
- 4.46 Although it is not yet known exactly what aspects of the underwriting policy and reinsurance arrangements will have to be covered by these opinions, we believe that the actuarial information on which they are based should be reliable. We are therefore proposing that this work should be within the scope of the insurance TAS.

**Performance related pay**

4.47 Actuarial information may be a component in determining performance related pay. Profits depend on an evaluation of liabilities, return on equity depends on an assessment and allocation of capital, Embedded Values depend on actuarial calculations. These and other measures can be used to determine performance related pay. Performance related pay is a commercial matter for insurers and the BAS has no intention of becoming involved in purely commercial areas. Performance related pay is however a topical issue, as it influences individual incentives and hence may influence the corporate risk profile of an insurer. However, given the uncertainty that exists around some of the measures that can be used we would be interested in the views of respondents on whether actuarial information used in the determination of performance related pay should be included within the scope of the insurance TAS. We are especially interested in understanding any practical difficulties there may be, and in the extent of the reliance that governing bodies and management of insurers should be able to place on such information.

**Risk management**

4.48 Under Solvency II the actuarial function will be required to contribute to the effective implementation of the risk management system. In addition, we expect that much of the work performed by the risk management function will be actuarial in nature. However, although actuarial and risk management functions will be required under Solvency II, this functional split may not always be reflected in the organisational structure of insurers.

4.49 The emphasis on risk management in Solvency II is consistent with a general trend in the insurance industry towards managing risk more explicitly, with a dedicated risk management committee and in some cases a Chief Risk Officer. Actuaries are increasingly involved in risk management teams, and it has been suggested to us that actuarial information provided to risk committees should be within the scope of the insurance TAS.

4.50 It seems likely that risk committees, and through them governing bodies, would want to place a high degree of reliance on such work, which supports its inclusion within scope. However, it may be difficult to provide clarity about what work would be covered, and the resulting benefits to users. We would appreciate respondents' views on this matter and in particular examples of actuarial work prepared for risk committees.

**OTHER FUNCTIONS**

4.51 Other insurance functions which use actuarial information are discussed below. These functions generally have a direct or indirect effect on policyholders and we believe that decisions relating to such functions should be supported by reliable actuarial information.

**Exercise of discretion by insurers**

4.52 Some insurance policies allow the insurer to exercise discretion over the benefits to be paid to the policyholder or the charges to be levied. For example, in with-profits insurance the insurer decides on the levels of bonus that are declared from time to time, and in some unit-linked insurance the

insurer decides on the amount of the charges for the costs of managing the business that are set against the underlying investments. These decisions, and others like them, rely heavily on actuarial information.

- 4.53 Governing bodies of insurers writing with-profits insurance are required to take actuarial advice on key aspects of the discretion they exercise. This advice is given by the With-Profits Actuary. The With-Profits Actuary's responsibilities also include commenting on the consistency of both the calculation of the with-profits insurance capital component and of the exercise of discretion with the insurer's Principles and Practices of Financial Management (PPFM).
- 4.54 The With-Profits Actuary must also report to policyholders on whether the firm has taken their interests into account in a reasonable and proportionate manner.
- 4.55 Supplying the actuarial information described in 4.53 and 4.54 is Reserved Work.
- 4.56 The actuarial information provided concerning the exercise of discretion with regard to with-profits insurance and its consistency with the PPFM is important to both policyholders and governing bodies of insurers. We therefore intend to include this Reserved Work within the scope of the insurance TAS.
- 4.57 We believe that the actuarial information and recommendations supporting the exercise of other types of discretion should also be within scope. Insurers may have the right to vary charges on policies, and may have discretion over the determination of surrender values offered when policyholders cancel their policies before the expiry of the term. Actuaries often provide information and make recommendations on the exercise of such discretion.
- 4.58 We therefore propose to include actuarial information supporting the exercise of any discretion by insurers that affects policyholders, and information provided to policyholders about the exercise of discretion, within the scope of the insurance TAS.
- 4.59 We would also be interested in respondents' views on whether there are any areas in which discretion is exercised that should not be within the scope of the insurance TAS and, if so, why it is not important that insurers and policyholders should be able to rely on actuarial information in these areas.

### **Product design and pricing**

- 4.60 The fundamental concern of insurers and their governing bodies is the management of insurance risk. Insurance risk is heavily influenced by product design and price. Decisions concerning the design and pricing of products that will be sold are therefore important to insurers and policyholders.
- 4.61 The BAS has no intention of proposing standards for product design or pricing decisions, as they are commercial matters. However, governing bodies and management of insurers should be able to rely on the actuarial information that is used in making such decisions.

- 4.62 We therefore propose to include the actuarial information used in product design and pricing within the scope of the insurance TAS. We seek the views of respondents on any practical difficulties there may be in determining the boundary between the information and the decision, and on its significance to the governing bodies and management of insurers.

### **Independent information**

- 4.63 In some transactions, notably Part VII transfers and schemes of arrangement, an independent expert is required to prepare information that is used by the court or another body in determining whether the transaction should proceed.
- 4.64 Part VII of the Financial Services and Markets Act 2000 provides for the transfer of insurance business between legal entities. These transfers, known as Part VII transfers, require court approval. The application made to court for an order sanctioning the transfer must be accompanied by a report from an independent expert on the terms of the scheme. The independent expert is usually (though not always) an actuary, and the expert's report considers such matters as the effect of the transfer on the policyholders (and others).
- 4.65 A scheme of arrangement is a court-sanctioned agreement between a company and a group of creditors to discharge the liabilities to the creditors in a designated manner. Schemes of arrangement are sometimes used to terminate insurance contracts between an insurer and a group of policyholders. Independent experts play a number of roles in schemes of arrangement, from giving opinions on the overall terms to acting as impartial adjudicators. In schemes of arrangement concerning insurers, their reports often rely heavily on actuarial information, and the experts themselves are often (but not always) actuaries.
- 4.66 Other transactions in which independent experts may be involved include the reattribution of inherited estates and the demutualisation of mutual insurance companies. In many cases these transactions are implemented through one or more Part VII transfers. In some cases, such as the reattribution of inherited estates, there may be an expert (the Policyholder Advocate) who is appointed to negotiate the terms of the reattribution on behalf of the with-profits policyholders. The Policyholder Advocate is not usually an actuary but relies heavily on actuarial information.
- 4.67 Actuarial information is also prepared for the insurers initiating these transactions. In some cases the information may be used in publicly available documents that are relied on by other parties. If the transaction involves with-profits business, the With-Profits Actuary may be asked to prepare a report.
- 4.68 We intend to include work performed as an independent expert and work performed for the use of an independent expert within the scope of our forthcoming TAS on business rearrangements. We would welcome views on whether work performed for one of the parties to a transaction in which an independent expert is involved should be within the scope of the insurance TAS, and whether different considerations apply to the work of the With-Profits Actuary in such circumstances. Respondents should consider the extent of the reliance that should be able to be placed on the actuarial

### Work reserved by legal obligation

- 4.69 Our *Scope & Authority*<sup>8</sup> defines Required Work as work carried out in order that the entity commissioning the work complies with regulations, or with some other legal obligation, that require the entity to have the work carried out (or make certain outcomes conditional on the work having been carried out). Reserved Work is defined as Required Work for which the regulations or other legal obligation require the entity in question to commission the work from an individual who holds a prescribed actuarial qualification (usually Fellowship).
- 4.70 In the previous paragraphs we have discussed the Reserved Work that arises from legal obligations imposed by legislation or regulation. Reserved Work may also arise from other legal obligations, such as policy documents or other contracts.
- 4.71 We would be interested in the views of respondents on whether all Reserved Work, including that arising from other than regulatory or legislative obligations, should be within the scope of the insurance TAS. Respondents are asked to describe specific examples of such Reserved Work in order to support their arguments.

### SUMMARY

- 4.72 In considering the scope proposals below, it should be noted that some types of work may be within the scope of more than one specific TAS.
- 4.73 We are proposing that the following work should be within the scope of the insurance TAS:
- a) determining insurance liabilities for regulatory reporting purposes (paragraphs 4.14 to 4.16);
  - b) assessing insurance liabilities for Companies Act and other statutory financial reporting purposes (paragraphs 4.17 to 4.18);
  - c) work for the auditor concerning an insurer's determination of insurance liabilities (paragraphs 4.19 to 4.20);
  - d) determining Embedded Values for financial statements (paragraphs 4.21 to 4.23);
  - e) assessing regulatory capital requirements (paragraphs 4.24 to 4.27);
  - f) actuarial information supporting the exercise of discretion by insurers, and information provided to policyholders about the exercise of discretion (paragraphs 4.52 to 4.59);

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<sup>8</sup> See paragraphs 15 to 19 of the *Scope & Authority*.

- g) actuarial information used in product design and pricing (paragraphs 4.60 to 4.62);
  - h) actuarial information used in business planning (paragraphs 4.28 to 4.29);
  - i) actuarial information supporting setting the premium for reinsurance to close in a Lloyd's syndicate (4.41 to 4.42);
  - j) asset-liability modelling (paragraph 4.44); and
  - k) work related to opining on underwriting policy and reinsurance arrangements (paragraphs 4.45 to 4.46).
- 4.74 We are proposing that the following work (as well as possibly being included in the insurance TAS) should be within the scope of other TASs to be developed by the BAS:
- a) pension fund reporting in financial statements (paragraphs 4.21 to 4.23);
  - b) determining Embedded Values for financial statements (paragraphs 4.21 to 4.23); and
  - c) work performed as an independent expert or for the use of an independent expert in transactions such as Part VII transfers, schemes of arrangement and in estate reattributions (paragraphs 4.63 to 4.68).
- 4.75 We are proposing that the following work should not be within the scope of the insurance TAS:
- a) decisions in business planning, product design and pricing (paragraphs 4.28 to 4.29 and 4.60 to 4.62); and
  - b) investment work other than asset-liability modelling (paragraph 4.43 to 4.44).
- 4.76 We are asking for the views of respondents on whether the following work should be within the scope of the insurance TAS:
- a) capital assessment and allocation work performed for purposes other than regulatory compliance (paragraphs 4.30 to 4.32);
  - b) work performed for one of the parties involved in a merger or acquisition, commutation or capital raising exercise (paragraphs 4.34 to 4.40);
  - c) actuarial information used in the determination of performance related pay (paragraph 4.47);
  - d) actuarial information provided to risk committees (paragraphs 4.48 to 4.50);
  - e) work performed for one of the parties to a transaction in which an independent expert is involved (paragraphs 4.63 to 4.68); and
  - f) Reserved Work arising from other than regulatory and legislative obligations (paragraphs 4.69 to 4.71).

Section 4 discusses the possible scope of the insurance TAS.

**The BAS would welcome responses to the following questions:**

- 3. Do respondents agree that the areas of work listed in paragraph 4.73 should be within the scope of the insurance TAS?**
- 4. Do respondents agree that the areas of work listed in paragraph 4.74 should be within the scope of TASs on accounting or business rearrangements, rather than within the scope of the insurance TAS?**
- 5. Do respondents agree that the areas of work listed in paragraph 4.75 should not be within the scope of the insurance TAS?**
- 6. Should the areas of work listed in paragraph 4.76 be within the scope of the insurance TAS? Respondents are asked to consider the degree of reliance that users should be able to place on the actuarial information.**
- 7. Is there any other work which is not mentioned above that should be within the scope of the insurance TAS?**

## 5 DATA

### INTRODUCTION

- 5.1 The exposure draft of TAS D contains requirements concerning data which will apply across a wide range of actuarial work, including all work within the scope of the insurance TAS (see section 4). The principles in TAS D cover the collection of data, its checking and the actions which may be taken when data is incomplete or inaccurate.
- 5.2 Working with imperfect data is a frequent hazard in insurance work, and the actions taken by actuaries to compensate for this may have a significant effect on the results produced and the uncertainty surrounding them. For this reason we believe that it is appropriate to introduce two additional principles in the insurance TAS regarding data.
- 5.3 Paragraphs 5.6 to 5.15 look at types and sources of insurance data. Paragraphs 5.16 to 5.23 look at the quality of data.

### BACKGROUND

- 5.4 The definition of data in the exposure draft of TAS D is as follows:

A collection of facts or information usually collected from records or as the result of experience or observation. Examples include membership or policyholder data, claims data, asset and investment data, operating data (such as expenses), benefit definitions and policy terms and conditions.

- 5.5 We wish to ensure that the best dataset possible in practice is obtained for any exercise within the scope of the insurance TAS. We think that it is important that all practicable sources of data are considered, especially when the most obvious sources are inadequate.

#### **Types of insurance data**

- 5.6 Policy terms and conditions form part of the data that would normally be taken into account, since the propensity to claim and the amounts claimed have a direct link to the underlying terms and conditions.
- 5.7 Other material supplied to policyholders, such as the Principles and Practices of Financial Management (PPFM) for with-profits insurance business, may also have an impact on liability amounts.
- 5.8 Company business plans may contain essential information pertaining to the future conduct of the business. This information could have a significant impact on the analysis of matters such as future capital requirements, reinsurance recovery expectations, and the future costs of running the business.
- 5.9 Past and proposed future management actions that lie outside the business plan may also have a significant effect, and should be taken into consideration. This is of particular relevance in relation to the exercise of management discretion in awarding policy benefits for with-profits insurance

business. Other examples of such actions could be changes to strategies concerning staffing levels, investment, claims management and reinsurance.

- 5.10 The insurer's own experience will form the natural core dataset for most work within the scope of the insurance TAS. For example, in developing mortality assumptions most life insurers take into account their own experience since their policyholders may differ from the general population in some important mortality characteristics. Likewise the first port of call for producing an ultimate claims estimate in general insurance will typically be the claims development experience of the relevant portfolio, together with the associated premiums.
- 5.11 However, the insurer's own experience may not always be applicable, for example if current policyholders are different in important respects from past policyholders, or if the environment of claims development has evolved due, for instance, to changes in business mix, consumer pursuit of claims or claims handling practices. Such events may impair the predictive ability of the insurer's data and make it necessary to seek further data.
- 5.12 Economic and financial assumptions play a major role in some types of liability valuation, especially for long-term business. Asset values and asset yields are observed and analysed as part of the process of setting a suitable discount rate.
- 5.13 In many contexts there are factors extraneous to the insurer that could influence the liabilities, such as changes in economic conditions, legislation, or demographic parameters. An example of a legislative change influencing liabilities is the provision of the Courts Act 2003, which gave the courts power to impose structured settlements (regular payments for life) instead of lump sums in personal injury cases. Information about such factors should form part of the overall dataset if relevant.
- 5.14 It may be necessary to obtain data from outside the insurer in cases where the internal data is inadequate. The data may be sparse or may be a poor predictor of future outcomes through age or changing circumstances, or may be absent altogether in the case of a new line of business. In such situations it will be necessary to seek external information such as market data, published research, benchmarks, expert opinion or public information.
- 5.15 The assessment of liabilities net of reinsurance requires due attention to be paid to the costs and expected benefits of reinsurance programmes. Where such programmes are placed, the data used should include information on the provisions of reinsurance policies, including any costs to which the insurer is contractually committed.

## **QUALITY OF DATA**

- 5.16 We believe strongly in the importance of accurate and complete documentation of data, from the identification of sources to the indication of which data has been used for which purpose. The exposure draft of TAS D<sup>9</sup> covers this point.

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<sup>9</sup> TAS D exposure draft paragraph C.4.1.

- 5.17 Where possible, for instance in the case of publicly available capital market data, the data used should be applicable on the effective date of the calculations. Inevitably however, much data will be out of date to some degree by the time it is used. In general, the most up to date data possible should be used if the information based on it is to be reliable.
- 5.18 Whilst recognising that it is almost never possible to put together a complete and perfect dataset, we would like to encourage an active quest for the best data possible in practice. With this in mind we therefore propose that the insurance TAS includes the following principle:

Data available for insurance work should be assessed not only for accuracy, relevance and completeness but also for its reliability as a predictor of the future. The dataset chosen should be as up to date as possible, and include suitable elements from the insurer's own experience and, subject to availability, external information.

### **Poor quality data**

- 5.19 Data is often inaccurate, irrelevant, incomplete, sparse, biased, or out of date. Such imperfections in data increase the uncertainty of the result of any calculation based on it. It is also possible that the data is not appropriate for the intended use even though it is otherwise of high quality, or is a poor predictor of the future for other reasons such as changes in the conduct of the business, consumer expectation or external conditions.
- 5.20 The exposure draft of TAS D<sup>10</sup> requires an assessment of whether the reliability of inadequate data can be improved by adjusting or supplementing it. We think that the insurance TAS should go further, by requiring that additional data be sought in these circumstances, where it is proportionate to do so. We therefore propose that the insurance TAS includes the following principle:

When the data is of doubtful quality or likely to be a poor predictor of the future, steps should be taken to supplement or adjust the data, provided it is considered that this would result in a proportionate improvement in the reliability of the results.

- 5.21 Whether or not the data has been adjusted or supplemented, problems of quality may remain. We are seeking the views of respondents on the action, if any, that we should require in these circumstances. The exposure draft of TAS D<sup>11</sup> states that margins should not be incorporated into assumptions to mitigate the effects of inaccurate or incomplete data unless specifically required by regulation or a Specific TAS. Adjustments may however be made to results, so a possible course of action for the insurance TAS is to require such an adjustment. We seek the views of respondents on this, and on whether there are other areas of work where we should require margins to be added when data is known to be poor.

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<sup>10</sup> TAS D exposure draft paragraph C.5.9.

<sup>11</sup> TAS D exposure draft C.5.14.

- 5.22 An alternative to incorporating margins in assumptions would be to make an adjustment to the result. For example an additional allowance for data deficiency could be incorporated into the overall provisions when assessing insurance liabilities.
- 5.23 In the event that assumptions or results are adjusted for poor data, the exposure draft of TAS D<sup>12</sup> further requires that the adjustments be separately identified.

Section 5 considers data requirements for insurance work.

**The BAS would welcome responses to the following questions:**

8. **Do respondents have any comments on the proposals concerning data that are presented in section 5, especially those in paragraphs 5.18 and 5.20?**
9. **Respondents are asked for their views on the actions, if any, that should be required to mitigate the effects of poor data, and in particular their views on the incorporation of margins in assumptions, and any effects that this or any other action might have on the transparency of assumptions and comprehensibility of the resulting actuarial information (paragraphs 5.19 to 5.23).**
10. **Are there any other data issues which respondents believe should be covered by principles in the insurance TAS?**

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<sup>12</sup> TAS D exposure draft C.5.15 and C.5.16.

## 6 ASSUMPTIONS

### INTRODUCTION

- 6.1 The exposure drafts of TAS M and TAS R contain requirements which will apply across a wide range of actuarial work, including all work within the scope of the insurance TAS (see section 4). TAS M includes principles for the assumptions used in models, and TAS R includes principles for the reporting of assumptions on which calculations or judgements are based. In this section we consider the selection of assumptions in insurance work and set out a number of proposed principles.
- 6.2 Paragraphs 6.3 to 6.5 discuss general considerations which apply when setting assumptions. Paragraphs 6.6 to 6.11 discuss the estimation of cash flows in insurance. Paragraphs 6.12 to 6.24 consider some general principles that apply to assumptions across all areas of insurance work. Paragraphs 6.25 to 6.69 consider specific principles that apply to assumptions. Paragraphs 6.70 to 6.80 discuss assumptions for specific areas of work including the determination of insurance liabilities and advising on risk and capital.

### BACKGROUND

- 6.3 The choice of assumptions can have a significant impact on the results of calculations and on the decisions taken by users of actuarial information. It is therefore important that those responsible for choosing assumptions understand the rationale for them and how the choice of different assumptions might affect any decisions which will be made.
- 6.4 It has been suggested to us that we should set limits on assumptions used to determine insurance liabilities. It is argued that this would improve consistency and help governing bodies of insurers. However, we believe that actuaries and governing bodies of insurers should use their judgement in selecting assumptions which are appropriate for the particular circumstances. No limits can be universally applicable and we are therefore not currently inclined to set limits.
- 6.5 In some circumstances governing bodies of insurers are responsible for setting actuarial assumptions; in others they make decisions based on assumptions and other actuarial information provided to them (see paragraph 6.71). In the remainder of this section we use the term “selecting assumptions” to refer to the process of determining the assumptions to be used, recommended or presented in actuarial information, regardless of who has the formal responsibility of choosing the assumptions.

### Estimation of future cash flows

- 6.6 The estimation of future cash flows is essential to a number of actuarial calculations in insurance. The evaluation of long-term insurance liabilities, the assessment of capital requirements for an insurer, the determination of in force values within embedded value calculations for long-term insurers and recommendations on premium rates will usually involve estimating future cash flows. In general insurance, other methodologies are commonly used currently to determine insurance liabilities without estimating future cash

flows explicitly. Solvency II makes a presumption that cash flows will become more generally used in determining insurance liabilities and their variability.

- 6.7 The assumptions that need to be selected to estimate future cash flows and their present value include:
- financial assumptions such as investment returns which may both drive policyholder benefits and be used to determine discount rates, and inflation rates which may affect the projected claim and running costs of the insurer;
  - demographic assumptions such as mortality or morbidity rates which are used to project claim costs in long-term insurance;
  - assumptions about policyholder behaviour such as surrender rates or option exercise rates where policies include embedded options such as a penalty free surrender value or a guaranteed annuity rate applicable at a defined date; and
  - assumptions about future management behaviour in those circumstances where they may have discretion such as in changing asset strategies, determining benefits on with-profits policies through the bonus mechanism or increasing policy charges on long-term insurance policies, or, in general insurance, their response to the insurance cycle.
- 6.8 Assumptions are usually selected allowing for relevant market based information, company information or a combination of both depending on the type of cash flows that are being modelled. For example, in the case of estimating cash flows related to annuity business, assumptions about future mortality, including expected changes in mortality, play an important role. As well as relevant company experience, research material including trend models and publications from the CMI or other organisations might provide useful insights.
- 6.9 Past cash flows may not necessarily be a guide to what future cash flows can be expected. For example, in long-term insurance where there are embedded financial options in policies whose future cash flows are being projected, changes in financial conditions may mean that although the option had little value in past periods it may have substantial value in future periods. As a result future take up rates may differ significantly from those observed in the past. In general insurance, changes in claims management procedures or in the mix of underlying business may alter the pattern of future claim cash flows from those observed in the past.
- 6.10 In assessing insurance liabilities and their variability for general insurance, the nature of the assumptions used differs from those used for long-term insurance liabilities as it is not so common to model future cash flows explicitly. Placing a value on general insurance liabilities frequently involves

making assumptions about development patterns<sup>13</sup> and expected loss ratios<sup>14</sup>.

- 6.11 Other assumptions in general insurance, relating to matters such as changes in legislation, large loss or catastrophe loads<sup>15</sup>, variations in the incidence of risk, or specific large loss outcomes, are selected having regard to relevant market based information, company information or a combination of both.

## GENERAL PRINCIPLES

- 6.12 In the following paragraphs we consider principles which might apply to the selection of assumptions in all areas of insurance work.

### Purpose

- 6.13 When selecting assumptions consideration must be given to the nature and purpose of any calculations for which they will be used. For example, the assumptions to be used in calculating the statutory insurance liabilities for a long-tail general insurance contract are likely to be different from those used to determine a commutation value for the same contract. We therefore propose that the insurance TAS includes the following principle:

The selection of assumptions should take account of the purpose of the calculations for which they will be used.

### Legislation

- 6.14 Legislation or other regulations sometimes specify the actuarial assumptions to be used for an exercise or the methodology to be used to derive some or all of the assumptions. In the event of a conflict with the requirements of legislation or regulations from other bodies, the BAS will alert that body to the conflict. The requirements of legislation or other regulations should be applied but the conflict should be disclosed to the user.

### Evidence base

- 6.15 Assumptions should be based on evidence, and should reflect conditions at the effective date of the calculations in which they will be used. The evidence sources for the selection of assumptions are discussed in section 5. This section discusses the need to obtain relevant, reliable, and timely data on which to base assumptions.

- 6.16 Assumptions should be chosen on the basis of the data obtained. We therefore propose that the insurance TAS includes the following principle:

The selection of assumptions for work within the scope of this standard should be justifiable from the available data.

- 6.17 A particular issue in general insurance is the insurance cycle. This is a function of supply and demand. After a period of losses, capital is depleted

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<sup>13</sup> Ratio of paid or reported losses in successive periods.

<sup>14</sup> Losses divided by premiums.

<sup>15</sup> A loading to allow for the cost of extreme losses which may not have been observed in past data.

and the supply of insurance reduces; premium rates rise and loss ratios reduce as a consequence. The prospect of good returns attracts capital into the business increasing the supply of insurance; premiums rate fall and loss ratios increase. The cycle repeats. There is also evidence that the strength of reserves ebbs and flows in tandem with the insurance cycle, a phenomenon sometimes referred to as the reserving cycle. The Turner Review and the FSA discussion paper in response to it both emphasised the importance of cyclicity in the context of the recent banking crisis. We would be interested to hear respondents' views on whether the insurance TAS should include a principle addressing whether an allowance should be made for the insurance and reserving cycles in the selection of assumptions.

### **Timeliness**

- 6.18 In general there are likely to be differences between the effective date of the data, the date at which the actual calculations are performed, and the effective date of the calculations. For instance year-end data may be collected as at 15 November and used in calculations performed on 15 December, for an assignment whose effective date is 31 December.
- 6.19 We wish to ensure that appropriate adjustments are made to the assumptions or the final results if events occur after the effective date of the data that would have materially affected the results. Judgement will have to be used to assess the need for such an adjustment.
- 6.20 We therefore propose that the insurance TAS includes the following principle:

The selection of assumptions should take account of any material events known to have occurred after the effective date of the data.

### **Consistency**

- 6.21 It is important that the assumptions are consistent with each other, as well as that each assumption should be justifiable individually. The exposure draft of TAS M<sup>16</sup> requires that assumptions used in models are consistent. We believe that any set of assumptions developed for insurance work implies the existence of a model in which they will be used so that no additional consistency principle is required in the insurance TAS. We would be interested to hear from respondents if there are any assumption sets used in actuarial work in insurance that cannot be linked to an underlying model.

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<sup>16</sup> TAS M exposure draft paragraph C.6.9.

- 6.22 We believe that, in order to give confidence to users, assumptions for work that is performed at regular intervals should not be changed arbitrarily. If assumptions are changed, the change should be justified and an indication of the overall impact should be disclosed. The justification could make reference to matters such as new data or the correction of an error. The definition of data will be wide in TAS D (see paragraph 5.4), and will include all information that contributes to the selection of assumptions. We therefore propose that the insurance TAS includes the following principle:

For work performed at regular intervals, assumptions should be changed only if justified by new data. Matters that should be explained to the user include the rationale for the change, including whether the change is driven by experience or by an expectation that future events will differ from the past, and the overall impact of the change on the results.

### **Adjustments to assumptions**

- 6.23 On occasion it may be expedient to modify one assumption in order to reflect a shortcoming in another. We believe that this approach makes information less transparent to users, and is inconsistent with the achievement of our Reliability Objective.
- 6.24 We therefore propose that the insurance TAS includes the following principle:

No adjustment should be made to any assumption to compensate for a shortcoming in another assumption.

## **SPECIFIC ASSUMPTIONS**

### **Discount rates**

- 6.25 Discounting is widely used in actuarial work to assign a single value to a series of cash flows (which may be either income or outgoings) that take place over a period of time. It is used to assign a present value to the cash flows that will occur in the future. In insurance it is used, for example, in:
- determining the insurance liabilities of long-term business;
  - determining liabilities for latent exposures in general insurance;
  - advising on transaction prices for insurance portfolios; and
  - determining premium rates for long-term insurance and long-tail general insurance.
- 6.26 For each cash flow in the series of cash flows being valued the significant elements are the amount of the cash flow, when it will take place and the discount rate used for that cash flow. As interest rates have a term structure<sup>17</sup> the discount rate used for a particular cash flow will depend on the timing of that cash flow. In the following paragraphs we discuss the discount rate.

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<sup>17</sup> The variation of investment yields with the term of the investment.

- 6.27 Actuaries should be aware that discounting can be very confusing to users, with small and seemingly innocuous changes to assumptions producing large changes in discounted values, and apparently healthy present values obscuring significant cash flow difficulties. We believe that actuaries should be concerned to take care that the mystery of present values is not used to blur the reality of cash flows.
- 6.28 Like any other assumption, the discount rate used for calculations should depend on the purpose of those calculations. The question of discounting was examined by the value working group of the BAS, which reported in 2007<sup>18</sup>. The group's report identified a number of different purposes for which discounting calculations might be required in insurance, some of which are described in paragraph 6.25.
- 6.29 The exposure draft of TAS R<sup>19</sup> requires an explanation of the rationale behind the selection of any material assumptions used or recommended: the discount rate is likely to be a material assumption. In some cases, for example in assessing insurance liabilities for long-term insurance, regulation will determine or place restrictions on the discount rate to be used.
- 6.30 However, given the many different purposes of calculations it is useful for users to understand how the discount rate chosen for a particular purpose compares with other possible rates. One way of doing this is to compare the chosen rate with a standard comparator rate. The discount rates chosen for different purposes will have different relationships with the comparator.
- 6.31 It has been suggested that suitable comparator rates could be the yield on low risk assets such as swaps or government bonds.
- 6.32 We are considering requiring the use of comparator rates through the inclusion of a principle such as the following:
- The relationship between the selected discount rate and a low risk rate should be explained to the user.
- 6.33 We would be interested in respondents' views on the proposal to have a comparator and if so what the comparator should be or what features it should have and how the relationship should be communicated to users.

### **Illiquidity premium**

- 6.34 A particular issue to be considered in the selection of a discount rate to be used when calculating insurance liabilities is whether or not it is appropriate to include an illiquidity premium.
- 6.35 In order to provide a competitive return to policyholders on certain policies such as annuities, the investment strategy followed often includes the assumption of credit risk by investing in corporate bonds, mortgages and other credit instruments. The pricing of such assets incorporates a greater yield spread over gilts or swaps than that suggested by consideration of the

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<sup>18</sup> Available at

<http://www.frc.org.uk/images/uploaded/documents/Value%20Working%20Group%20Report2.pdf>.

<sup>19</sup> TAS R exposure draft paragraph C.6.6.

risk of default alone. It is argued that this additional spread reflects the relative lack of liquidity of such instruments. This is the illiquidity premium.

- 6.36 If liabilities are valued in the same way the market values other financial instruments, known as a market consistent liability valuation, it is possible to argue in certain circumstances that an illiquidity premium may be captured at inception. This is the case where a buy and hold to maturity investment strategy can be implemented because it is possible to closely match asset and liability cash flows and any non-market risks within the liabilities cannot, even in stressed conditions, create a particularly volatile or uncertain cash flow.
- 6.37 Under current rules for determining the discount rate to be used for long-term insurance liabilities for regulatory purposes<sup>20</sup> a “risk adjusted” rate derived from assets allocated to support the liabilities forms the basis of the calculation. The relevant risk adjustment for credit risk reflects a reduction for that part of the yield on those assets providing compensation for that credit risk only. The remaining discount rate will include the illiquidity premium as well as the risk free rate.
- 6.38 It is common practice for long-term insurers to allow for an illiquidity premium in determining insurance liabilities for their annuities in payment portfolios. On such policies it is typically not possible for policyholders to cancel the liabilities in any circumstances; this reduces significantly the potential volatility in claim costs.
- 6.39 However, there is uncertainty about how the excess yield on corporate bonds and other similar assets over low credit risk instruments such as gilts can be decomposed between the risk of default and the illiquidity premium. We therefore propose that the insurance TAS includes the following principle:

Any illiquidity premium included in the discount rate should be disclosed and the rationale for its selection explained.

- 6.40 Such an explanation might describe the allowance made for matters such as credit contagion, forced disposals due to the effect of downgrades by investment analysts, any illiquidity costs associated with such a forced disposal, and the reasonableness at market level of any estimates of illiquidity premiums.

### **Economic assumptions**

- 6.41 Economic assumptions such as interest rates and inflation rates play an important role in insurance, especially for long-term business. Assumptions should take account of the risk characteristics of the cash flows being estimated, for example in with-profits insurance policies which contain embedded financial options. Other than in cases where regulation or financial accounting imposes restrictions or defines rules, information from relevant markets should be the starting point for this information.
- 6.42 Assumptions about future rates of inflation may affect a number of matters, including, for example, future claims costs in health insurance business and

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<sup>20</sup> FSA Handbook INSPRU 3.1.28.

the costs of running the insurer. They should take account of any indicators available, such as the yield available on index linked gilts, published forecasts from the Bank of England and other economic commentators and relevant expert opinion.

- 6.43 We do not propose to have any specific principles in our insurance TAS for the selection of such assumptions. However, TAS R requires that the report to the user includes the rationale for the selection of these assumptions<sup>21</sup>.

### **Mortality**

- 6.44 We issued a discussion paper on *Mortality* in March 2008. Having considered responses to that paper we decided that we would not produce a separate TAS on mortality. We said, however, that we would cover the selection of mortality assumptions in Specific TASs.

- 6.45 Mortality assumptions are not always presented in a way that is easy for the users of actuarial information to understand. For example, the name of a mortality table may mean little to those who are not actuaries.

- 6.46 Future rates of mortality depend on both current rates of mortality and the way in which those rates are expected to change in the future. As we discussed in the discussion paper on *Mortality*, we believe that these two factors are very different in nature: in principle it is often possible to obtain reliable information about current rates of mortality, whereas it is impossible to know what the future holds in terms of changes to mortality rates. In addition, it is often possible to select assumptions about current rates of mortality on an insurer specific basis, whereas it is debatable whether that can be done for future changes.

- 6.47 We therefore propose that the insurance TAS includes the following principle:

Separate assumptions should be selected for current rates of mortality and for future changes to mortality rates.

### **Morbidity**

- 6.48 When assessing health insurance business, assumptions about sickness rates and connected matters will be needed. These morbidity assumptions, as they are known, cover the incidence of sickness, the probability of making a claim, and probabilities of recoveries and other events that may result in a change to or the cessation of a claim, depending on the nature of the contract. The assumptions often vary by sickness or diseases covered. Morbidity, like mortality, is also subject to variation over time – for example, screening programs or prevention strategies can accelerate incidence rates whilst better treatments can accelerate recoveries. Morbidity may also be affected by economic conditions.

- 6.49 We therefore propose that the insurance TAS includes the following principle:

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<sup>21</sup> TAS R exposure draft paragraph C.6.6.

Separate assumptions should be selected for current rates of morbidity incidence and other probabilities affecting claims and for future changes to these rates.

- 6.50 We recognise there are certain types of health insurance business for which simpler models are often used, such as models in which assumptions are based on the proportion sick at any one time. We would be interested to hear whether the proposed principle would require disproportionate work to be performed.

### **Policyholder decisions**

- 6.51 Assumptions concerning lapse rates are often needed when assessing insurance liabilities and their variability for long-term insurance and more generally in business planning. Lapse rates are the rates at which long-term policyholders cancel their contracts or general insurance policyholders do not renew. As with mortality and morbidity the starting point in the selection of such assumptions should be the recent experience of the insurer.
- 6.52 Some long-term insurance includes financial features which will influence policyholder behaviour, such as guaranteed annuity conversion rates on pension policies or penalty free surrender terms on with-profits bonds. Assumptions are required about policyholder behaviour in such circumstances. These decisions are often influenced by economic conditions which may differ from those observed in the past. Past experience may therefore not be useful in setting assumptions about the rates at which options will be taken up in the future. In such circumstances it is important that any assumptions about the actions of policyholders are consistent with the economic assumptions. In addition, the decisions made by policyholders tend to be for their benefit rather than for the insurer and allowance should be made for this effect.
- 6.53 We do not propose to have any specific principles for assumptions concerning policyholder decisions in our insurance TAS. However, the exposure draft of TAS R requires that the report to the user includes the rationale for the selection of all assumptions.

### **Management discretion**

- 6.54 Insurers may award discretionary benefits such as bonuses on with-profits insurance and vary policy charges such as risk charges under unit-linked life insurance. Data requirements surrounding management discretion were discussed in paragraph 5.9. Information on the ability of management to exercise discretion which may affect policy benefits should be taken into account when selecting assumptions. Discretionary elements could also include ex gratia or other payments which may be made by the insurer even though it is not under a contractual obligation to make them. Such payments may be made to preserve reputation or a business relationship.
- 6.55 In very large companies management actions may affect the market as a whole in ways which have implications for the assumptions used in their actuarial work. Such implications should be allowed for in the selection of assumptions.

- 6.56 Management discretion may be of particular significance in conditions of stress, since these are likely to lead to departures from the practices that would be expected in normal conditions.
- 6.57 We therefore propose that the insurance TAS includes the following principle:
- Assumptions about the exercise of management discretion should take account of past experience and information about the insurer's intentions, particularly in stressed conditions.
- 6.58 The absence of any allowance for the exercise of discretion is itself an assumption.

### **Running costs**

- 6.59 The costs of running an insurer, including those for marketing and sales, administration and investment management, are usually referred to as expenses. In this document we use the term running costs. Assumptions about the level of running costs are important in calculating insurance liabilities, determining premium rates and assessing profitability. In determining minimum regulatory capital the insurer must, under current rules, consider a scenario that allows for the cessation of new business. This is likely to lead to a short term increase in costs as the infrastructure is adjusted to that appropriate to a run-off business, followed by a long term increase in unit costs as fixed costs become an ever larger proportion of the total running costs.
- 6.60 Judgement will be required in making appropriate allowance for the total cost of running the business. For example, as business volumes change the impact of fixed costs will vary or as new administration systems are introduced productivity may improve leading to reductions in variable costs. There is likely to be uncertainty over the impact of such changes. Therefore, we believe it is particularly important that users understand the reasons for any material change in the level of running costs and its impact on results. We therefore propose that the insurance TAS includes the following principle:

The rationale for any material change in anticipated running costs from current levels should be explained and the impact on results disclosed.

### **Unforeseen latent events**

- 6.61 Unforeseen latent events are those caused by hazards that were not apparent at the time of underwriting and which trigger claims years after the period of cover has expired. An example is the cost of asbestos-related and other environmental hazard claims in general insurance. Increasing awareness of the possibility of such claims has led to stricter underwriting standards and policy conditions which have mitigated the risk to some degree, but the danger remains that unidentified sources of claims will lead to severe loss experience. By their very nature, risks such as the emergence of new latent claims are almost impossible to model.

- 6.62 In some instances the historical experience used to analyse the business may contain some latent claim development, in which case it could be argued that an allowance for future such claims has been made implicitly.
- 6.63 The allowance to be made for the possibility of such claims depends greatly on the susceptibility of the business to their emergence and the terms and conditions of the policies. We believe that this is a matter for judgement and that it would be excessively prescriptive to include a principle in the insurance TAS, but we would welcome the views of respondents.

### **Extreme events**

- 6.64 Recent experience offers much evidence that actuarial work has not always made sufficient allowance for the possibility of unlikely events actually occurring. This is consistent with the observed systematic bias of people to be optimistic which naturally leads to a tendency to underestimate the likelihood of negative events.
- 6.65 The extreme dislocation of credit markets that occurred in 2008, and unexpected physical occurrences (such as the World Trade Centre attack) are examples of extreme events which have had or could have a major impact on insurers (and others).
- 6.66 It is difficult to predict such events from data. For example, a dataset containing ten years of general claims data may well not include any events which might be expected to occur only once in twenty or fifty years and a mortality experience in long-term insurance covering only a few years may not include a pandemic. To ignore such events and rely on the raw data may result in an understatement of future expected claims.
- 6.67 This issue is of particular importance when conducting stress testing or scenario testing exercises, since the results will be of little value if the scenarios used are not sufficiently extreme.
- 6.68 We therefore believe that special consideration should be given to the possibility of extreme events, the mitigating actions taken by the firm, and the allowance made for them. We therefore propose that the insurance TAS includes the following principle:

In estimating insurance liabilities and their variability, explicit allowance should be made for potential events which, while having a very low probability, would have a very serious financial impact.

- 6.69 An explicit allowance could be zero.

### **SPECIFIC AREAS OF WORK**

- 6.70 In the following paragraphs we consider principles which might apply to the selection of assumptions in specific areas of insurance work.

#### **Determining insurance liabilities**

- 6.71 In determining liabilities the governing bodies of long-term insurers are responsible for setting assumptions based on information and recommendations from the Actuarial Function Holder. In general insurance companies, it is more common for actuaries to set the assumptions (and

inform the governing bodies of the amount of the insurance liabilities). In some areas regulation prescribes how assumptions should be set. This is likely to continue under the Solvency II regime.

- 6.72 It is not uncommon for insurance liabilities to be determined prudently, ie including provision for adverse experience. This can be done either by incorporating explicit margins in assumptions as in the current regulatory regime for long-term insurance or by adding additional amounts to the best estimate liability as envisaged by Solvency II.
- 6.73 We are interested in respondents' views on whether we should allow explicit margins to be included in the selection of assumptions to be used to determine insurance liabilities. We do not believe it is the role of the BAS to determine a minimum level of prudence or how prudence should be allowed for, believing rather that it is the responsibility of the governing bodies of insurers to determine the appropriate level for their business. We recognise that the results of many actuarial calculations consist of a distribution of possible outcomes rather than a single fixed outcome. However, if we are to permit the inclusion of margins in assumptions recommended in actuarial information we will require disclosure of the margins. We are interested in the views of respondents on whether we should also require disclosure of the impact of the margins, through quantification of the margin for prudence in the liabilities over the best estimate. If margins are incorporated we also believe it would be appropriate to require explanation of any change in the level of prudence from one determination to the next.
- 6.74 The exposure draft of TAS R<sup>22</sup> requires that the meaning of terms such as prudence is explained to the user of actuarial information. The exposure draft of TAS M<sup>23</sup> requires that the user is given an indication of the extent to which estimates have been influenced by the purpose of a model. This means that estimates of insurance liabilities described as prudent should be accompanied by an indication of the level of prudence involved. We believe that it is important that the governing bodies of insurers have good information on which to base their decisions about the prudence or otherwise of the assumptions that they choose or liabilities that they set.

### Capital assessment

- 6.75 One of the key areas in the modelling of risk in insurers is the allowance for co-dependency of risks. This can be addressed in various ways including:
- explicitly modelling linked risks, such as liabilities that depend on assets;
  - scenario testing; and
  - correlation matrices.
- 6.76 Whilst acknowledging that modelling of co-dependencies is an inexact science, we think that it is important that the methodology and assumptions chosen are documented and explained. It is particularly important that the users understand their limitations.

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<sup>22</sup> TAS R exposure draft paragraph C.4.8.

<sup>23</sup> TAS M exposure draft paragraph C.6.18.

- 6.77 We seek the views of respondents on whether a principle addressing these matters is required in the insurance TAS, or whether the need for transparency is sufficiently met by the requirements on modelling and reporting in TAS M and TAS R.
- 6.78 Assumptions on the co-dependency of risks can have a material effect on the capital requirement. The data required to determine the relationships is likely to be scarce, especially when considering extreme events. It is also possible that the nature of the relationships may change in periods of stress compared with the relationships observed in more stable times.
- 6.79 We therefore believe that special consideration should be given to co-dependencies between risks in scenarios of extreme stress where there is likely to be high uncertainty. The exposure draft of TAS M requires explanations of any material limitations in models and their implications. However the issue of co-dependencies under stress is often highly material. We therefore propose to include the following principle in the insurance TAS:
- In estimating insurance liabilities and their variability, explicit allowance should be made for changes in the co-dependencies of risks in scenarios of high stress compared with those of low stress.
- 6.80 An explicit allowance could be zero.

Section 6 discusses assumptions. Paragraphs 6.3 to 6.24 discuss considerations that apply to the selection of assumptions in all areas of insurance work. Paragraphs 6.25 to 6.80 discuss considerations applying to specific assumptions, including discount rates, inflation, other economic assumptions, mortality, other demographic assumptions, discretionary benefits and running costs.

**The BAS would welcome responses to the following questions:**

11. Do respondents have any comments on the proposals concerning assumptions that are presented in section 6, especially those in paragraphs 6.13, 6.16, 6.20, 6.22, 6.24, 6.39, 6.47, 6.57, 6.60, 6.68 and 6.79?
12. Do respondents have any views on whether the insurance TAS should include principles addressing:
- a) the allowance that should be made for cycle effects in the selection of assumptions? (paragraph 6.17)
  - b) assumptions concerning latent claims? (paragraphs 6.61 to 6.63)
  - c) prudential margins in assumptions used to determine insurance liabilities? (paragraphs 6.71 to 6.74)
  - d) the communication of limitations and uncertainties in the modelling of co-dependencies? (paragraphs 6.75 to 6.78)
13. Are respondents aware of any assumption sets used in actuarial work in insurance that cannot be linked to an underlying model? (paragraph 6.21)

- 14. Respondents are asked for their views on whether a standard comparator rate for discount rates would assist users' understanding, and if so whether a low risk rate should be used. (paragraphs 6.25 to 6.33)?**
- 15. Respondents are asked for their views on the practicality of the principle concerning morbidity assumptions proposed in paragraph 6.49, and in particular whether there are any types of health insurance where its application would require disproportionate work to be performed. They are asked to explain how the use of simpler models would support the achievement of the Reliability Objective.**
- 16. Are there any other principles on the selection of assumptions which respondents believe should be in the insurance TAS?**

## 7 MODELS AND CALCULATIONS

### INTRODUCTION

- 7.1 The exposure draft of TAS M sets out principles for models which will apply across a wide range of actuarial work, including all work within the scope of the insurance TAS (see section 4). In this section we address areas in which further principles may be required in the area of insurance. We cover modelling of insurance liabilities, risk, and capital requirements, testing alternative assumptions, earned and unearned business, large claims, currency issues, and reinsurance.

### METHODS

- 7.2 For many actuarial assignments within the proposed scope of the insurance TAS, a range of approaches can reasonably be adopted. For example the assessment of general insurance liabilities can use methods such as basic chain ladder, loss ratio, Bornhuetter-Ferguson, Cape Cod, case-by-case or a combination of these and other methods. The circumstances of the assignment, the nature of the business covered, and the data available will all contribute to the decision on which method to apply. Since these circumstances vary so widely, we do not propose to specify the methods that should be used. Our proposed approach is to leave the choice of method to the practitioner but to require appropriate explanation and documentation of the methods chosen.
- 7.3 The exposure draft of TAS M requires documentation of models to be sufficient for a technically competent person with no previous knowledge of the model being documented to understand the matters involved and assess the judgements made<sup>24</sup>, and that reports explain how the models on which they are based address the users' needs<sup>25</sup>. We believe that these principles adequately cover methods in relation to insurance and therefore do not propose to include any further principles on this in the insurance TAS.

### MODELLING INSURANCE LIABILITIES

- 7.4 Sections 5 and 6 of this paper address issues surrounding the data and assumptions used in models to determine insurance liabilities. The exposure draft of TAS M sets out principles such as the fitness for purpose and accuracy of the models chosen which will apply to models used to determine insurance liabilities. We do not propose any additional principles regarding the modelling of insurance liabilities.

### MODELLING RISK

- 7.5 We do not propose to discuss individual sources of risk in detail, since we think it would be inappropriate to mandate specific assumptions or types of treatment, given the large range of situations within the proposed scope of the insurance TAS. We do think however that due regard should be paid to

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<sup>24</sup> TAS M exposure draft paragraph C.4.1.

<sup>25</sup> TAS M exposure draft paragraph C.8.1.

all risks that are relevant to the assignment, and that the treatment applied should be documented and explained to the user. The risks covered could (if within the remit of the assignment) include:

- insurance risk;
- credit risk;
- market risk;
- operational risk;
- liquidity risk;
- pension scheme risk; and
- group risk.

7.6 We think that the exposure draft of TAS R sufficiently covers the reporting of most risks<sup>26</sup>.

7.7 However, two types of risk, liquidity and pension scheme risk, are of particular topical interest.

### **Liquidity risk**

7.8 Recent market events, such as the dislocation in the market for mortgage backed securities and the collapse of Lehman Brothers, have demonstrated how quickly liquidity risk can cause significant issues for financial institutions. It may be argued that this risk is more relevant to banks than insurers, but nevertheless the knock-on effects of liquidity pressures should not be underestimated. Liquidity risk is intensified in insurance by the volatility of claims experience: in general insurance this might be because of a catastrophic claim, and in long-term insurance it might result from an unexpected increase in policy surrenders. Liquidity risk may compound other risks. In the examples above, a catastrophic claim may be offset by a reinsurance recovery but should the reinsurer default, a credit risk event, then the general insurer may also default: in long-term business the increase in surrenders may force liquidation of assets at depressed prices compounding the insurer's market risk exposure.

7.9 Cash flow projections should be used to look at liquidity since periods of material net negative cash flow (income from premiums and investments not offsetting claims and running costs) are of concern. Scenario testing can be used to model the impact of claims volatility. We do not believe that an approach can be prescribed for considering this risk because of the wide range of circumstances that can give rise to liquidity problems.

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<sup>26</sup> TAS R exposure draft paragraph C.5.4.

- 7.10 However, in the light of recent events, we think that it is important that those making decisions about the capital required for insurers have good information about liquidity risk. We therefore propose the following principle for inclusion in the insurance TAS:

Reports on capital assessment should discuss the liquidity risk including any mismatching of incoming and outgoing cash flows taking account of the volatility in claims experience.

### **Pension scheme risk**

- 7.11 The cost of any defined benefit pension obligations to past and present employees will be a source of risk to the insurer. The cost will increase if investment returns are lower, salary inflation is higher or longevity increases faster than assumed, without sufficient offset from favourable factors. Thus the insurer may be indirectly exposed to market risk, inflation risk and demographic risk through its pension obligations to employees.
- 7.12 Any work related to overall capital assessment will also need to consider the possibility that future legislative changes will increase pension scheme risk through changes to funding requirements. The assumptions selected for assessing pension scheme risk should be consistent with those used when assessing the capital required for other risks such as market risk and insurance risk. We do not propose to include any specific principles in our insurance TAS for the selection of assumptions for this purpose. Nor do we propose any specific principles for the methods used to evaluate pension scheme risk as we believe the principles included in the exposure draft of TAS M together with those proposed elsewhere in this document will be sufficient.

### **MODELLING CAPITAL REQUIREMENTS**

- 7.13 The modelling of capital requirements for an insurer involves the assessment of liabilities and their variability. Asset variability is a component of the overall risk profile, and in insurers writing with-profits business this variability links directly to the liability risks. Therefore the matters covered in sections 5 and 6, along with consideration of assets, come together in capital modelling.
- 7.14 Capital models make use of a time horizon (the period over which the business is modelled), and a risk measure. For some purposes these features are determined by regulation, as in the current FSA ICAS<sup>27</sup> regime and the proposed Solvency II regulatory system, both of which use a one year time horizon and a 99.5% probability of survival. If there are no regulatory requirements the time horizon and risk measure should be suitable for the purpose and adequately explained to the users. We believe that the principles in the exposure drafts of TAS M and TAS R and proposed elsewhere in this document are sufficient in this area.

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<sup>27</sup> Individual Capital Adequacy Standards

## TESTING ALTERNATIVE ASSUMPTIONS

- 7.15 We believe that testing alternative assumptions, individually or in combination, is an essential feature of much of the work within the scope of the insurance TAS. It is an integral part of capital assessment, and it is also needed if the uncertainty of results in any other type of calculation is to be estimated with any accuracy.
- 7.16 The degree of sophistication of such testing will vary widely according to the purpose and circumstances of the work. Different assumptions may be varied independently or they can be dynamically linked or statistically linked using correlations. Examples of techniques that could be used include:
- stress testing;
  - scenario testing;
  - dynamic solvency testing;
  - sensitivity testing;
  - dynamic financial analysis; and
  - asset-liability modelling.
- 7.17 All these techniques have the fundamental underlying goal of analysing the present or future financial position of the insurer under different assumptions.
- 7.18 We therefore propose the following principle for inclusion in the insurance TAS:

In the assessment of insurance liabilities and their variability, alternative assumptions should be applied to help evaluate the uncertainty of the results.

### Stress testing and scenario analysis

- 7.19 Stress testing and scenario analysis are two methodologies that are commonly used in determining how particular risks affect the capital requirements.
- 7.20 Stress testing may be used to consider the sensitivity of the business to variations in the experience of one particular risk, for example the impact on the insurer of a failure of a reinsurer or a change in interest rates.
- 7.21 Since most insurers are exposed to a number of risks, the results of stress testing for individual risks should be combined using an aggregation technique to determine the overall capital requirement.
- 7.22 Scenario analysis can be used to reflect the impact on the insurer of variation in a number of risks simultaneously. Using scenarios can help when aggregating those risks for which the capital required responds in a non-linear fashion. For example, some management and policyholder actions can be modelled more accurately using scenarios and for those cases additional investigations with specified scenarios may be required to assess the impact

more accurately. Another use of scenario analysis is to assess the impact of a specific scenario on the capital.

- 7.23 Appropriate stress testing and scenario analysis are required under current regulatory capital rules<sup>28</sup>, but, given the possibility of bias in favour of optimistic scenarios against pessimistic ones, we believe that information on risk and capital should consider scenarios which jeopardise the survival of the business. We therefore propose that the insurance TAS includes the following principle:

Information on the risks being run by an insurer should include scenarios under which the ability of the firm to meet its obligations to policyholders in full would be impaired.

### **EARNED AND UNEARNED BUSINESS**

- 7.24 In order to make an accurate assessment of accrued liabilities in general insurance that complies with accounting principles it is necessary to make a distinction between earned claims and unearned claims. Earned claims are those arising from exposure periods prior to the accounting date and unearned claims are those arising from exposure periods after the accounting date. Provision for unearned claims is often expressed in terms of an unearned premium reserve and an additional reserve for unexpired risks. The second of these is added if it is believed that the premiums for the unearned business will not be sufficient to cover the claims arising from them.
- 7.25 In some circumstances this distinction is not straightforward to analyse. In classes of insurance where the level of exposure varies over the term of cover, such as construction project insurance or hurricane (re)insurance, the division between earned and unearned business will depend on the distribution of risk over the term of the policy and this may require actuarial input.
- 7.26 We therefore seek the views of respondents on whether the insurance TAS should include a principle requiring a distinction to be made between earned and unearned business.

### **LARGE CLAIMS**

- 7.27 In developing methodologies for assessing liabilities in general insurance it is often helpful to distinguish between attritional claims (small claims arising frequently), large claims (which arise infrequently) and catastrophe claims (those arising from a major event that causes multiple claims). This is because the way in which these types of claims develop is different (small claims tend to be settled more quickly). In addition, very large claims may need to be treated on a case-by-case basis as there can be special considerations such as legal issues.
- 7.28 Whilst we acknowledge the importance of this differentiation of claims, we do not propose that the insurance TAS should prescribe methods to be used when considering large claims. Whether or not the approach described in paragraph 7.27 is appropriate is a matter for judgement in the particular

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<sup>28</sup> *FSA Handbook* GENPRU 1.2.42R.

circumstances. It would be possible however for the insurance TAS to require documentation or reporting of how the issue has been treated.

- 7.29 We therefore seek the views of respondents on whether the insurance TAS should include a principle requiring information to be included on whether use has been made of the distinction between attritional, large and catastrophe claims and the rationale for the treatment chosen.

## **CURRENCY ISSUES**

- 7.30 When an insurer writes business denominated in multiple currencies, various issues will have to be addressed in regard to the valuation of liabilities. These mainly revolve around the extent to which past and potential future variations in rates of exchange need to be reflected in the value in reporting currency placed on future claims and claims development, and the future variability of those claims. The issue of variability affects work on capital requirements as well as insurance liabilities, since in both cases the communication of uncertainty is required by our Reliability Objective. When using claims development data to estimate liabilities, such as in the chain ladder method, the development patterns may be distorted if changes due to currency fluctuation are embedded in the data.
- 7.31 The above problems may be approached in different ways, including separating different currencies for analysis, or explicitly removing movements due to currency from data on the development of claims over time.
- 7.32 We therefore seek the views of respondents on whether the insurance TAS should include a principle requiring information to be included on the treatment of past and possible future variations in currency rates of exchange.

## **REINSURANCE**

- 7.33 There are several approaches that can be taken to estimating expected reinsurance recoveries and future reinsurance costs (including reinstatement premiums) when assessing liabilities net of reinsurance.
- 7.34 In stressed conditions various aspects of reinsurance risk may be exacerbated, such as failure of reinsurers, resistance to reinsurance claims, unavailability of credit facilities for reinsurers, or the availability of reinsurance cover on acceptable terms.
- 7.35 The principles proposed elsewhere in this document apply to both calculations including reinsurance and calculations ignoring reinsurance. Apart from the need for consistency, we do not believe there are any special considerations that apply to reinsurance calculations, and so are not proposing to include any specific principles on reinsurance in the insurance TAS. The potential for bad debt due to reinsurer failure is a credit risk which should be considered along with the other risks referred to in paragraph 7.5.

Section 7 discusses models and calculations. Few additional principles are proposed, as we think that TAS M and TAS R will cover most areas adequately.

**The BAS would welcome responses to the following questions:**

- 17. Do respondents have any comments on the proposals concerning models and calculations that are presented in section 7, especially those in paragraphs 7.10, 7.18 and 7.23?**
- 18. Do respondents have any views on whether the insurance TAS should include principles addressing the treatment of:**
  - a) earned and unearned business? (paragraphs 7.24 to 7.26)**
  - b) large claims? (paragraphs 7.27 to 7.29)**
  - c) currency issues? (paragraphs 7.30 to 7.32)**
- 19. Are there any other principles on the selection of models and calculations which respondents believe should be in the insurance TAS?**

## 8 REPORTING

### INTRODUCTION

- 8.1 The exposure draft of TAS R sets out principles for reporting which will apply across a wide range of actuarial work including all work within the scope of the insurance TAS (see section 4). In this section we address areas in which further principles may be required in the area of insurance.
- 8.2 The exposure draft of TAS R includes requirements for a statement of material assumptions and the rationale for their selection<sup>29</sup>. Similarly, the exposure draft of TAS R includes requirements for the rationale of methods and measures used for material calculations<sup>30</sup>. These principles will ensure that the user is given sufficient information to understand the rationale for the different assumptions that contribute to their decision making.
- 8.3 We believe therefore that the provisions of TAS R together with the principles on assumptions proposed in section 6 of this paper (Assumptions) are sufficient to address the majority of reporting issues in insurance.

### RESERVED ROLE HOLDERS' REPORTS

- 8.4 Certain reports are required from reserved role holders in the fulfilment of their reserved duties. The role holders concerned are
- Actuarial Function Holder (AFH);
  - With-Profits Actuary (WPA);
  - Appropriate Actuary (AA);
  - Reviewing Actuary (RA); and
  - Lloyd's Syndicate Actuary (SA).
- 8.5 The reports and duties required of these roles are covered in detail in Appendix A (paragraphs A.3 to A.17 and paragraphs A.20 to A.22).
- 8.6 The provisions of TAS R referred to in paragraph 8.2, together with the principles on assumptions, models and calculations in sections 6 and 7 of this paper will underpin the quality of these reports.

### VALIDATION OF RESULTS IN REPORTS

#### Monitoring assumptions against experience

- 8.7 It is an established principle of actuarial work that assumptions should be tested for suitability. One way of doing this is to compare assumptions with experience as it emerges, while keeping in mind that a particular block of actual experience may not be typical of the long term average, so that a short

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<sup>29</sup> TAS R exposure draft paragraph C.6.4.

<sup>30</sup> TAS R exposure draft paragraph C.6.6.

term deviation from expectations may not be significant enough to warrant a change in assumptions.

- 8.8 The way that this is done will vary according to circumstances and the purpose of the work. Approaches could include analysis of surplus, back testing, and comparing actual with expected experience.
- 8.9 Article 82 of the Solvency II Directive requires the regular monitoring of best estimate assumptions against experience, and the adjustment of these assumptions when a systematic deviation is observed. Our proposal in paragraph 8.10 is consistent with this requirement.
- 8.10 This discipline is essential as it can be an early indicator that modification of the assumptions is needed, particularly if some assumptions are not revisited frequently. We therefore propose that the insurance TAS includes the following principle:

When selecting assumptions for actuarial calculations that are performed regularly, the assumptions used in previous calculations should be compared with emerging experience and the results used to inform the selection of the new assumptions.

### **Sensitivity of results**

- 8.11 We discussed the benefits of using stress testing and scenario analysis in paragraphs 7.19 to 7.23. These methods can be used as validation techniques to understand the limitations of models, the robustness and weaknesses of results against extreme assumptions in risk and capital work, and investigation of non-linear relationships between assumptions.
- 8.12 For reports where the sensitivity of the results to the assumptions is likely to affect the user's decisions, the exposure draft of TAS M requires that explanations are given of how models are satisfactory representations of reality and are suitably predictive<sup>31</sup>. One way of achieving this objective is to perform sensitivity tests of key assumptions. For example, reports by Actuarial Function Holders that discuss the insurer's annual results and capital position should use sensitivity testing and scenario analysis as necessary to support the understanding of the results.
- 8.13 We believe that the provisions of TAS M are sufficient to encourage the use of sensitivity tests when this would help the user to understand the results, and that no further principles are required in the insurance TAS.

### **BEST ESTIMATES AND PRUDENT ESTIMATES**

- 8.14 In our consultation paper on *Modelling* we considered whether the equivalent best estimate should be presented alongside every prudent estimate. The feedback we received was that it was impractical to do so in every case, and so the principle will not be part of TAS M.

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<sup>31</sup> TAS M exposure draft paragraph C.7.9.

- 8.15 Current regulation<sup>32</sup> requires assumptions to be set prudently for insurance liabilities in long-term insurance. We believe that users of actuarial information in insurance should understand how prudent they are being when making decisions based on that information. For instance, boards of directors of insurers are responsible for setting insurance liabilities and they typically do so on the basis of actuarial recommendations. It has been suggested that one way to assist them is to ensure that they are given best estimates to compare with prudent assumptions and estimates.
- 8.16 Presenting best estimates in the course of assessing insurance liabilities also helps governing bodies and management assess how, if at all, the level of prudence has changed between successive similar exercises.
- 8.17 In instances where a prudent estimate is presented, it may also help users if the intended meaning of “prudent” in the given context is explained. This could take a form such as “we believe that the liabilities will exceed X with probability Y%”.
- 8.18 In some cases it may be difficult to produce a single best estimate. Indeed, it has been argued that prudent estimates have often been used in actuarial work precisely because it is difficult to determine a best estimate basis. We do not believe that these difficulties are insuperable, especially in the light of the Solvency II requirements to use best estimates as an explicit component of insurance liabilities. We also believe that there would be significant benefit to users if best estimates were presented in the course of the assessment of insurance liabilities.
- 8.19 We therefore propose that the insurance TAS includes the following principle:

In the assessment of insurance liabilities, any prudent estimate of liabilities that is presented should be accompanied by a best estimate. The change in the level of prudence from that in the previous such assessment should be explained to users.

## **WITH-PROFITS BUSINESS**

- 8.20 The With-Profits Actuary (WPA) is required to provide an annual opinion to policyholders on whether the insurer has exercised its discretion in a reasonable and proportionate manner. Regulation requires this opinion to be appended to the annual report to with-profits policyholders that the long-term insurer must produce. To provide policyholders with sufficient information to enable them to make decisions about their policies, we are considering whether the WPA should report to with-profits policyholders on:
- the financial impact on with-profits policyholders of any material changes to the PPFM that the company has made in the year;
  - the financial impact of any material exercise of discretion including any change in investment strategy of the with-profits fund(s), the basis for determining charges applied and running costs apportioned to the with-profits business, and any changes to surrender value scales; and

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<sup>32</sup> *FSA Handbook INSPRU 1.2.10.*

- investment and smoothing actions and asset share charges, positive and negative, possibly including what assumptions are made in these areas in stressed conditions.

8.21 We would be interested in respondents' views on this. In particular we would like to know whether respondents think that the WPA's report should simply comment on the insurer's annual with-profits report, or address in detail points such as those mentioned in paragraph 8.20.

### **SURRENDER VALUES**

8.22 One component of the design of long-term insurance policies is the surrender value scale – the amount that the company will pay on early termination of the policy. Such scales may either be guaranteed by the policy or allow for an element of discretion to be exercised by the insurer. Discretion is common in with-profits policies.

8.23 Given the imbalance between the insurer and the individual policyholder, we believe it is important that any recommendation on a surrender value scale is fair and seen to be fair. The data on which the recommendation is based should therefore include information on what has been or is proposed to be disclosed to policyholders about surrender value scales.

8.24 We would be interested to hear from respondents on what information might be useful when judging fairness. Possibilities might include requiring any recommendation to the governing body to include the disclosure of:

- any penalties imposed;
- any cross subsidy from surrendering policyholders to those remaining in force; and
- the treatment of any unamortised acquisition costs.

Section 8 considers the reporting of actuarial information for insurance. We discuss the need for additional requirements concerning the reporting of actuarial insurance information.

**The BAS would welcome responses to the following questions:**

20. **Do respondents have any comments on the proposals concerning reporting that are presented in section 8, especially those in paragraphs 8.10 and 8.19?**
21. **Do respondents have any views on whether the insurance TAS should include principles addressing:**
  - a) **the contents of the With-Profits Actuary's report to policyholders? (paragraphs 8.20 to 8.21)**
  - b) **the information that might be useful to the management of insurers in judging the fairness of surrender value scales? (paragraphs 8.22 to 8.24)**
22. **Are there any other principles on reporting which respondents believe should be in the insurance TAS?**

## 9 TRANSITION FROM ADOPTED GUIDANCE NOTES

### INTRODUCTION

- 9.1 The BAS has responsibility for the Guidance Notes that it adopted from the Actuarial Profession (the adopted GNs). The adopted GNs that cover topics related to insurance are GN1, GN2, GN7, GN8, GN12, GN18, GN20, GN23, GN33, GN40, GN41, GN43, GN44, GN45, GN46, GN47, and GN50. We intend to withdraw these GNs after the insurance TAS comes into effect and we will consult formally on the withdrawal at a later stage. The transition from these GNs to the new TAS is considered below.
- 9.2 The adopted GNs include a significant amount of detail, much of it to supplement regulation. We have had requests for guidance in selecting assumptions and methods to comply with regulation. However, we believe that our standards should not be regarded as guidance on regulation; it is not the role of BAS to ensure the solvency of insurers. We would be interested to hear from respondents who disagree with our view, particularly explaining how users of actuarial information would be helped by more detailed rules and guidance.
- 9.3 Our standards primarily cover technical areas. The Actuarial Profession is responsible for ethical and conduct standards, subject to oversight by the Professional Oversight Board. There are, however, some areas covered by the adopted GNs that could be construed either as technical or as ethical. An example is the requirement for a With-Profits Actuary to advise the governing body of the insurer on key aspects of the discretion to be exercised by the firm in respect of the with-profits policyholders.
- 9.4 It has been suggested to us that, rather than analysing in detail the difference between technical requirements on the one hand and ethical and conduct matters on the other, a pragmatic approach would be for our insurance TAS to cover the areas which could be construed either way. In the discussion of the adopted GNs below, we identify some of the principal matters which we think fall into this category. We invite respondents to comment on whether we should cover matters such as these, and if so which ones, in the insurance TAS. We are especially interested in whether users of actuarial information believe that covering such matters in the insurance TAS would increase the reliance they could place on the information.

### GN1

- 9.5 GN1 (*The Prudential Supervision in the UK of Long-Term Insurance Business*) was applicable to Appointed Actuaries and Appropriate Actuaries of UK-supervised insurance companies and friendly societies writing long-term insurance business in respect of periods prior to and not including 31 December 2004 and also Syndicate Actuaries of Lloyd's syndicates writing long-term insurance business. It therefore now applies only to the latter group.
- 9.6 However, Lloyd's has told us that GN1 is no longer a requirement for those actuaries signing life syndicate opinions. Therefore, our intention is to

withdraw GN1 when the insurance TAS becomes effective. We would welcome any views from Lloyd's Syndicate Actuaries on whether they still refer to any aspects of this GN.

## **GN2**

9.7 GN2 (*Financial Condition Reports*) is recommended practice. Regulation does not define the content of a Financial Condition Report (FCR), nor does it require Actuarial Function Holders (AFH) or Appropriate Actuaries (AA) to produce one. The requirement to produce an FCR, or similar report, arises only from paragraph 6.1 of GN1. Given that we intend to withdraw GN1 when the insurance TAS becomes effective, the need for GN2 will also fall away and we will withdraw it.

9.8 We expect that the provision of information by the AFH or the AA enabling governing bodies of long-term insurers to assess the risks facing the insurer and the capital required to meet them will be subject to our TASs as it is Reserved Work.

## **GN7**

9.9 GN7 (*The Role of Actuaries in Relation to Financial Statements of Insurers and Insurance Groups writing Long-Term Business and their Relationship with Auditors*) is recommended practice for actuaries who calculate the insurance liabilities to be included in the financial statements of long-term business insurers domiciled in the United Kingdom. GN7 discusses the role and responsibilities of the reporting actuaries along with those of the directors.

9.10 Our TASs will cover the requirements related to the evaluation and reporting of the insurance liabilities. We therefore intend to withdraw GN7 when the insurance TAS becomes effective.

## **GN8**

9.11 GN8 (*Additional Guidance on valuation of long-term insurance business*) has requirements on the assessment of insurance liabilities and solvency margins of long-term insurance business. GN8 is organised into three parts. We summarise our thinking for each part as below:

- Part I was relevant to Appointed Actuaries for valuations prior to 31 December 2004.
- Part II is relevant to Appropriate Actuaries. The content is primarily an elaboration of the regulatory requirements. We believe the principles outlined in our TASs should adequately cover the assessment of insurance liabilities.
- Part III was relevant to Syndicate Actuaries of Lloyd's for long-term business. Lloyd's has told us that GN8 is no longer a requirement.

9.12 Given that Parts I and III no longer apply, and that our TASs will cover the principles underlying the assessment and reporting of insurance liabilities, we intend to withdraw GN8 when the insurance TAS becomes effective.

**GN12**

- 9.13 The purpose of GN12 (*General insurance business - actuarial reports*) is to “give guidance on the circumstances in which a member should normally prepare a formal report in the field of general insurance, and to describe the basic elements that should normally be included in such a report.”
- 9.14 GN12 contains a combination of technical and professional guidance on the preparation of formal reports. Professional matters are not within the BAS’s remit. Since the BAS’s duty is to produce standards as opposed to guidance, some of the material in GN12 is not suitable for inclusion in the BAS’s Technical Actuarial Standards.
- 9.15 The concept of a formal report concluding a piece of actuarial work has a lesser focus in the BAS standards than in the GN system. The BAS’s concentration is on the entirety of the information provided to the user to enable a decision to be made.
- 9.16 The technical content of GN12 is largely covered by TAS R. The following paragraphs address the sections of GN12 in more detail.
- 9.17 The introduction contains material on formal reports which is not relevant to the new TAS structure, as explained in paragraph 9.15. The paragraph on actuaries as part of a multidisciplinary team is replaced by paragraphs 25 to 28 of the *Scope & Authority*, whose provision is broadly similar. The introduction goes on to refer to compliance with professional guidance, which has been superseded by the TAS structure, to reliance on the work of others (which is construed as data in the TAS system) and to joint responsibility for reports (covered in the *Scope & Authority* paragraphs 25 to 28).
- 9.18 The second section is confined to the definition of terms, which is required now under the exposure draft of TAS R<sup>33</sup>.
- 9.19 The third section deals with the purpose and scope of reports, and also requires that “the report should normally contain detail sufficient for another suitably experienced member to form an opinion on the original member’s key judgements and assess the reasonableness of the results”. We believe that it may not serve the needs of users to include this amount of detail in reports, as the additional detail may have the effect of obscuring the main messages, or may not contribute to the user’s understanding of the material covered. We think that the requirements of the insurance TAS and the Generic TASs together will ensure that reports provided, together with the associated documentation (which will not normally be in the reports) will be sufficient for such an assessment to be made.
- 9.20 The fourth section of GN12 addresses issues pertaining to the information and data used. Reference is made to the sources of data, responsibility for accuracy and completeness, reliance on others, limitations, effect on data appropriateness of changes in the conduct of business, uncertainty, grouping, and adjustments. These issues are addressed in the exposure draft of TAS D and in this paper. The wording may differ from GN12, but the spirit of the

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<sup>33</sup> TAS R exposure draft paragraph C.4.8.

requirements is the same and there are no significant departures from the approach taken in GN12.

- 9.21 The fifth section of GN12 covers methodology and assumptions. Most of the requirements are addressed in the exposure draft of TAS R.
- 9.22 GN12 concludes with sections on results and uncertainty, whose contents are also largely addressed in the exposure draft of TAS R.
- 9.23 We therefore intend to withdraw GN12 when the insurance TAS becomes effective.

## **GN18**

- 9.24 US regulators require a Statement of Actuarial Opinion for Excess and Surplus Lines or Reinsurance business written by UK companies on US risks. GN 18 (*UK General Insurance Companies writing US Regulated Business*) covers this requirement. A key objective for US regulators is to ensure that the opinion, and the work on which it is based, is backed by the force of UK actuarial regulation.
- 9.25 US regulatory requirements are outside the geographic scope of our standards<sup>34</sup>. However, we see no reason why different standards should apply to this work compared with any other actuarial work which is within the scope of our TASs.
- 9.26 Most of the content of GN18 is non-technical. The technical content is adequately covered by the insurance TAS and the Generic TASs. We therefore intend to withdraw GN18 when the insurance TAS becomes effective.

## **GN20**

- 9.27 Each year, all Lloyd's syndicates writing general insurance business are required by the Lloyd's Valuation of Liabilities Rules to provide the Council of Lloyd's with a Statement of Actuarial Opinion (SAO) on their world-wide insurance liabilities, both gross and net of reinsurance.
- 9.28 For any such syndicate, the relevant Lloyd's managing agent must appoint an actuary (the Syndicate Actuary) to provide the SAO. The work of the Syndicate Actuary is Reserved Work, as it is required by regulations (see paragraph A.16). The purpose of GN20 (*Actuarial Reporting under the Lloyd's Valuation of Liabilities Rules*) is to give guidance to any Syndicate Actuary providing an SAO.
- 9.29 We have discussed this issue with Lloyd's. The BAS and Lloyd's are satisfied that the necessary requirements will be covered by our TASs and the Lloyd's Valuation of Liabilities Rules. We therefore intend to withdraw GN20 when the insurance TAS becomes effective.

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<sup>34</sup> *Scope & Authority* paragraph 13.

**GN23**

- 9.30 GN23 (*Life Insurance Company Takeovers*) is recommended practice for actuaries working in connection with takeovers involving life insurers. GN23 summarises the responsibilities for these actuaries including the requirements for providing independent advice, for consideration to be given to potential conflicts and for disclosures.
- 9.31 In paragraphs 4.63 to 4.68 we discuss whether transaction related actuarial work should be within the scope of the insurance TAS or included within the scope of the forthcoming TAS on Business Rearrangements (or both). In either case the requirements in our TASs will replace the requirements in GN23.
- 9.32 We therefore intend to withdraw GN23 either when the insurance TAS becomes effective or when the TAS on Business Rearrangements becomes effective.

**GN33**

- 9.33 US regulators require a Statement of Actuarial Opinion for Excess and Surplus Lines or Reinsurance business written by Lloyd's syndicates on US risks. GN33 (*Actuarial Reporting for Lloyd's Syndicates writing US business*) gives guidance to actuaries providing these statements.
- 9.34 US regulatory requirements are outside the geographic scope of our standards. However, we see no reason why different standards should apply to this work compared with any other actuarial work which is within the scope of our TASs.
- 9.35 Requirements that are specific to the way Lloyd's conducts its business are addressed in the Lloyd's Valuation of Liabilities Rules.
- 9.36 We therefore intend to withdraw GN33 when the insurance TAS becomes effective.

**GN40**

- 9.37 GN40 (*The Role of the Actuarial Function Holder*) sets out the duties of the Actuarial Function Holder (AFH) as defined in the *FSA Handbook*<sup>35</sup> and gives guidance on how to fulfil them. Section 2 of GN40 quotes from the *FSA Handbook* and Financial Services and Markets Act 2000 on matters that are relevant to the AFH role, section 3 summarises the requirements for the appointment as AFH, and the remainder of the text consists of guidance on how to comply with the requirements in the *FSA Handbook*.
- 9.38 The matters covered in section 3 of GN 40 are primarily ethical and conduct matters and so will not be addressed in our TASs.

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<sup>35</sup> The FSA Handbook of Rules and Guidance.

- 9.39 The matters covered in section 4 onwards that could be construed as either technical or ethical (see paragraphs 9.3 to 9.4) include the requirements for the AFH
- to use judgement to decide which risks need to be monitored, the frequency with which they should be monitored, and to advise the firm accordingly;
  - to advise the firm in writing of the actions that could be taken if the solvency position of the firm were to deteriorate, or capital requirements were to increase, as a result of circumstances either within or outside the control of the firm (the text goes on to give details on what this advice should include); and
  - when a proposed charging basis, whilst commercially justifiable, will involve significant new business strain, to be satisfied that the firm will be able to set up the necessary reserves and additional regulatory capital.
- 9.40 Core principles of GN40 in relation to the requirements for the work done by the AFH will be covered by our TASs. We therefore intend to withdraw GN40 when the insurance TAS becomes effective.

#### **GN41**

- 9.41 The *FSA Handbook* requires insurers with with-profits insurance liabilities to appoint a With-Profits Actuary (WPA). It also provides rules and guidance on the duties of the WPA and the insurer. GN41 (*The Role of the With-Profits Actuary*) gives guidance to the WPA.
- 9.42 GN41 summarises the requirements in the *FSA Handbook* for appointment as WPA and provides guidance on how to comply with these requirements.
- 9.43 GN41 also covers what the WPA should do to achieve fairness for policyholders. We believe these to be ethical and conduct matters, and so will not address them in our TASs. However, in some cases the tools that are used are technical.
- 9.44 An example of the requirements in GN41 that could be construed as either technical or ethical (see paragraphs 9.3 to 9.4) is:
- The WPA must seek to ensure, through appropriate wording in his or her terms of reference, that he or she will receive, on a timely basis, copies of all papers issued to the governing body that are relevant to the management of the with-profits fund.
- 9.45 Core principles of GN41 in relation to the work performed by the WPA will be covered by our TASs. We therefore intend to withdraw GN41 when the insurance TAS becomes effective.

#### **GN43**

- 9.46 GN43 (*The Role of the Appropriate Actuary*) sets out the duties of the Appropriate Actuary (AA) as defined in the *FSA Handbook* and sets out requirements on how they should be fulfilled. Section 2 of GN43 summarises the requirements for appointment as AA and the remainder of the text explains how to comply with the requirements of the AA role as specified in

the *FSA Handbook*, including actuarial investigations that need to be performed on the long-term business and the reports that consist of the recommendations from the AA to the firm's management on the allocation of profits.

- 9.47 Core principles of GN43 in relation to the requirements for the work done by the AA will be covered by our TASs. We therefore intend to withdraw GN43 when the insurance TAS becomes effective.

#### **GN44**

- 9.48 The content of GN44 (*Mathematical Reserves and Resilience Capital Requirement*) supplements the rules and guidance in the *FSA Handbook* on the calculation of the mathematical reserves and resilience capital requirements. We expect that the requirements in GN44 along with the FSA rules and guidance on the matter will be replaced by the Solvency II regulations.
- 9.49 The principles underlying the calculation of insurance liabilities and assessing their variability will be covered by the Generic TASs and the insurance TAS. We therefore intend to withdraw GN44 when the insurance TAS becomes effective.

#### **GN45**

- 9.50 The *FSA Handbook* requires some long-term insurers with with-profits insurance liabilities to determine a with-profits insurance capital component (WPICC) in respect of these liabilities. GN45 (*Determining the With-Profits Insurance Capital Component*) provides additional guidance to long-term insurers on how to meet their regulatory requirements with respect to the calculation of the WPICC.
- 9.51 We expect the WPICC calculations to become redundant when Solvency II comes into in force.
- 9.52 The principles underlying the calculation of the WPICC will be covered by the Generic TASs and the insurance TAS. We therefore intend to withdraw GN45 when the insurance TAS becomes effective.

#### **GN46**

- 9.53 The Individual Capital Assessment (ICA) is the regular assessment by an insurer of the adequacy of its financial resources, required by the *FSA Handbook*. GN46 (*Individual Capital Assessment*) provides additional guidance to insurers on how to meet the FSA's regulatory requirements.
- 9.54 Many concepts of the ICA have equivalents in the Own Risk Solvency Assessment (ORSA) under Solvency II.
- 9.55 The principles underlying the derivation of the ICA will be covered by the Generic TASs and the insurance TAS. We therefore intend to withdraw GN46 when the insurance TAS becomes effective.

#### **GN47**

- 9.56 GN47 (*Stochastic Modelling of Economic Risks in Life Insurance*) provides guidance on the use of techniques for stochastic modelling of economic risks

within a long-term insurer with particular reference to its regulatory obligations. The guidance provides a common framework for assessing the robustness of the models and calibration approaches used in stochastic modelling and the uses to which the modelling is put. GN47 is recommended practice.

- 9.57 The principles defined in our Generic TASs and the insurance TAS should enable users of actuarial information to have confidence in the results of actuarial calculations, particularly with regard to the assessment of insurance liabilities and their variability. They will cover the appropriateness of models and suitability of assumptions. We therefore intend to withdraw GN47 when the insurance TAS becomes effective.

## **GN50**

- 9.58 GN 50 (*General Insurance Principles and Practice*) sets out standards for work in general insurance. It includes standards on data, methodology and assumptions, communicating uncertainty and presentation of results. These elements are covered by our Generic TASs and the insurance TAS. We therefore intend to withdraw GN50 when the insurance TAS becomes effective.

Section 9 considers the transition from the adopted GNs to the new BAS standards. It describes each adopted GN in the insurance area, including any significant requirements that will not be covered in the Generic or Specific TASs.

**The BAS would welcome responses to the following questions:**

- 23. Do respondents believe that the insurance TAS should provide guidance on the interpretation of regulations affecting insurers or more detailed rules on the selection of assumptions and methods in order to comply with regulations? They should support their arguments by explaining how guidance or more detailed rules would assist the achievement of our Reliability Objective (paragraph 9.2).**
- 24. Do respondents have any comments on the proposed transitional arrangements from the adopted GNs to TASs described in section 9?**
- 25. Do respondents have any views on whether matters which could be construed as technical or ethical such as those mentioned in paragraphs 9.39 and 9.44 should be included in the insurance TAS?**

## 10 INVITATION TO COMMENT

### QUESTIONS

- 10.1 The BAS invites the views of those stakeholders and other parties interested in actuarial information who wish to comment on the content of this document. In particular the BAS would welcome views on the following issues:
- 1 Respondents are asked to comment on the advantages and disadvantages of a single insurance TAS compared with separate TASs for long-term insurance and general insurance, with particular reference to the needs of the users of actuarial information (paragraphs 1.22 to 1.30).
  - 2 Will the proposed purpose of the insurance TAS that is set out in paragraph 2.12 help to ensure that users of actuarial information can place a high degree of reliance on its relevance, transparency of assumptions, completeness and comprehensibility?
  - 3 Do respondents agree that the areas of work listed in paragraph 4.73 should be within the scope of the insurance TAS?
  - 4 Do respondents agree that the areas of work listed in paragraph 4.74 should be within the scope of TASs on accounting or business rearrangements, as well as possibly within the scope of the insurance TAS?
  - 5 Do respondents agree that the areas of work listed in paragraph 4.75 should not be within the scope of the insurance TAS?
  - 6 Should the areas of work listed in paragraph 4.76 be within the scope of the insurance TAS? Respondents are asked to consider the degree of reliance that users should be able to place on the actuarial information.
  - 7 Is there any other work which is not mentioned above that should be within the scope of the insurance TAS? (section 4)
  - 8 Do respondents have any comments on the proposals concerning data that are presented in section 5, especially those in paragraphs 5.18 and 5.20?
  - 9 Respondents are asked for their views on the actions, if any, that should be required to mitigate the effects of poor data, and in particular their views on the incorporation of margins in assumptions, and any effects that this or any other action might have on the transparency of assumptions and comprehensibility of the resulting actuarial information (paragraphs 5.19 to 5.23).
  - 10 Are there any other data issues which respondents believe should be covered by principles in the insurance TAS? (section 5)
  - 11 Do respondents have any comments on the proposals concerning assumptions that are presented in section 6, especially those in paragraphs 6.13, 6.16, 6.20, 6.22, 6.24, 6.39, 6.47, 6.57, 6.60, 6.68 and 6.79?

- 12** Do respondents have any views on whether the insurance TAS should include principles addressing:
- a) the allowance that should be made for cycle effects in the selection of assumptions? (paragraph 6.17)
  - b) assumptions concerning latent claims? (paragraphs 6.61 to 6.63)
  - c) prudential margins in assumptions used to determine insurance liabilities? (paragraphs 6.71 to 6.73)
  - d) the communication of limitations and uncertainties in the modelling of co-dependencies? (paragraphs 6.75 to 6.77)
- 13** Are respondents aware of any assumption sets used in actuarial work in insurance that cannot be linked to an underlying model? (paragraph 6.21)
- 14** Respondents are asked for their views on whether a standard comparator rate for discount rates would assist users' understanding, and if so whether a low risk rate should be used. (paragraphs 6.25 to 6.33)
- 15** Respondents are asked for their views on the practicality of the principle concerning morbidity assumptions proposed in paragraph 6.49, and in particular whether there are any types of health insurance where its application would require disproportionate work to be performed. They are asked to explain how the use of simpler models would support the achievement of the Reliability Objective.
- 16** Are there any other principles on the selection of assumptions which respondents believe should be in the insurance TAS? (section 6)
- 17** Do respondents have any comments on the proposals concerning models and calculations that are presented in section 7, especially those in paragraphs 7.10, 7.18 and 7.23?
- 18** Do respondents have any views on whether the insurance TAS should include principles addressing the treatment of:
- a) earned and unearned business? (paragraphs 7.24 to 7.26)
  - b) large claims? (paragraphs 7.27 to 7.29)
  - c) currency issues? (paragraphs 7.30 to 7.32)
- 19** Are there any other principles on the selection of models and calculations which respondents believe should be in the insurance TAS? (section 7)
- 20** Do respondents have any comments on the proposals concerning reporting that are presented in section 8, especially those in paragraphs 8.10 and 8.19?

- 21 Do respondents have any views on whether the insurance TAS should include principles addressing:
- a) the contents of the With-Profits Actuary's report to policyholders? (paragraphs 8.20 to 8.21)
  - b) the information that might be useful to the management of insurers in judging the fairness of surrender value scales? (paragraphs 8.22 to 8.24)
- 22 Are there any other principles on reporting which respondents believe should be in the insurance TAS? (section 8)
- 23 Do respondents believe that the insurance TAS should provide guidance on the interpretation of regulations affecting insurers or more detailed rules on the selection of assumptions and methods in order to comply with regulations? They should support their arguments by explaining how guidance or more detailed rules would assist the achievement of our Reliability Objective (paragraph 9.2).
- 24 Do respondents have any comments on the proposed transitional arrangements from the adopted GNs to TASs described in section 9?
- 25 Do respondents have any views on whether matters which could be construed as technical or ethical such as those mentioned in paragraphs 9.39 and 9.44 should be included in the insurance TAS?
- 10.2 In addition to the specific questions listed above, the BAS invites respondents' views on any other aspects of the proposed insurance TAS. To ensure that the significance of their point is fully appreciated by the BAS, respondents are asked to indicate how their comments would address the BAS's aim of increasing the reliance that users of actuarial information can place on it.

## RESPONSES

- 10.3 For ease of handling, we prefer comments to be sent electronically to [basinsurance@frc.org.uk](mailto:basinsurance@frc.org.uk). Comments may also be sent in hard copy form to:
- The Director  
Board for Actuarial Standards  
5<sup>th</sup> Floor, Aldwych House  
71-91 Aldwych  
London  
WC2B 4HN
- 10.4 Comments should reach the BAS by 20 November 2009.
- 10.5 All responses will be regarded as being on the public record unless confidentiality is expressly requested by the respondent. A standard confidentiality statement in an e-mail message will not be regarded as a request for non-disclosure. We do not edit personal information (such as telephone numbers or email addresses) from submissions; therefore only information that you wish to publish should be submitted. If you are sending a confidential response by e-mail, please include the word "confidential" in the subject line of your e-mail.

- 10.6 We aim to publish non confidential responses on our web site within ten working days of receipt. We will publish a summary of the consultation responses, either as a separate document or as part of, or alongside, any decision.

# A ACTUARIAL WORK IN INSURANCE

## INTRODUCTION

A.1 This appendix describes the principal areas of work in insurance in which actuaries are involved.

## ROLES DEFINED BY REGULATION

A.2 The *FSA Handbook* requires certain types of insurer to appoint actuaries to defined roles. It also defines certain tasks that must be performed by those role holders.

### Actuarial Function Holder

A.3 Insurance companies and certain types of Friendly Society carrying on long-term insurance business are required by regulation to appoint an actuary to the role of Actuarial Function Holder (AFH)<sup>36</sup>.

A.4 Long-term insurers required by FSA regulations to appoint an AFH are required to conduct an investigation into the financial condition of their business at least once a year<sup>37</sup>. These investigations are Reserved Work.

A.5 The investigation must include:

- a) a determination of the insurer's long-term liabilities;
- b) a valuation of the excess over these liabilities of the assets representing the long-term insurance fund(s) and, where policyholders have rights to participate in profits of particular parts of the fund, a valuation of the excess of assets over liabilities in respect of those parts; and
- c) where relevant, a calculation of the with-profits insurance capital component (WPICC).

A.6 The governing body of the insurer is responsible, acting on the advice of the AFH, for the assumptions and methods used in the determination of its liabilities and the calculation of the WPICC. This advice is Reserved Work.

A.7 The duties of the Actuarial Function Holder are set out in the *FSA Handbook*<sup>38</sup>. These duties are Reserved Work. The AFH must report:

- a) on the material risks assumed by the business;
- b) on the regulatory capital required by the business;

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<sup>36</sup> *FSA Handbook* SUP 4.3.1.

<sup>37</sup> *FSA Handbook* IPRU (INS) 9.4R.

<sup>38</sup> *FSA Handbook* SUP 4.3.

- c) on an exceptions basis if:
- the firm is not meeting its liabilities to its life insurance policyholders or may not be doing so or might not have done so or might, in reasonably foreseeable circumstances, not do so;
  - the firm is writing new life business on terms which might jeopardise, taking in to account all the other financial resources available, its ability to meet its policyholder liabilities (including reasonable bonus expectations);
  - the firm does not or may not have sufficient financial resources to meet liabilities to policyholders (including reasonable bonus expectations) and the capital to support the business;
- d) on the assumptions and methods to be used in determining insurance liabilities and, when relevant, the with-profits insurance capital component (WPICC); and
- e) on the results of the calculations of the insurance liabilities and the WPICC.

A.8 Some insurers are required by regulation to prepare a “realistic balance sheet” at the end of the first six months of the financial year<sup>39</sup>. These companies are known as Realistic Basis Life Insurers. The AFH is required to recommend assumptions and make calculations to enable the governing bodies of these insurers to determine liabilities, calculate the WPICC and report on the results. This is Reserved Work.

### **With-Profits Actuary**

- A.9 Insurance companies and certain types of Friendly Society who carry on with-profits life insurance (insurance where policyholders have the right to participate in the profits of some or all of the business) are required to appoint a With-Profits Actuary (WPA).
- A.10 The duties of the With-Profits Actuary are set out in the *FSA Handbook*<sup>40</sup>. These duties are Reserved Work. The WPA must report:
- a) on the consistency of the assumptions used in determining the WPICC with the PPFM;
  - b) on the key aspects of the discretion that might be exercised with regard to the with-profits business. At least once a year the WPA will report to the firm’s governing body on the actual exercise of discretion in the period covered by the report; and
  - c) to with-profits policyholders annually on whether the firm has taken account of the interests of policyholders in a reasonable and proportionate manner.

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<sup>39</sup> *FSA Handbook* IPRU (INS) 9.3A.

<sup>40</sup> *FSA Handbook* SUP 4.3.

### Appropriate Actuary

- A.11 Friendly Societies that do not have to appoint an Actuarial Function Holder must appoint an actuary to the role of Appropriate Actuary (AA).
- A.12 Those Friendly Societies required to appoint an AA are required to conduct an investigation into their financial condition at least once every three years, which must be performed by the AA. These investigations are Reserved Work.
- A.13 The investigation must include:
- a) a determination of the insurer's long-term liabilities;
  - b) a valuation of the excess over these liabilities of the assets representing the long-term insurance fund(s) and, where policyholders have rights to participate in profits of particular parts of the fund, a valuation of the excess of assets over liabilities in respect of those parts; and
  - c) where relevant, a calculation of the with-profits insurance capital component (WPICC).
- A.14 The governing body of the insurer is responsible, acting on the advice of the AA, for the assumptions and methods used in the determination of its liabilities and the calculation of the WPICC. This advice is Reserved Work.
- A.15 The duties of the Appropriate Actuary (AA) are set out in the *FSA Handbook*<sup>41</sup>. The AA must report on:
- a) the results of the calculations of the insurance liabilities; and
  - b) the excess of assets in the fund(s) over liabilities.

### Lloyd's Syndicate Actuary

- A.16 The *FSA Handbook* requires managing agents of Lloyd's syndicates to appoint a Syndicate Actuary (SA), whose main statutory duty is to provide an opinion to Lloyd's on the sufficiency of the technical provisions held, and to support the opinion with a report<sup>42</sup>.
- A.17 Lloyd's syndicates conducting long-term insurance business are required to include a certificate from their SA in their Lloyd's Return. This requires them to conduct an investigation, to be performed by the SA, into the financial condition of their business. The investigation includes a determination of the long-term insurance liabilities and a review of the adequacy of premiums. This investigation is Reserved Work.

### Lloyd's Actuary

- A.18 The *FSA Handbook* requires the Society of Lloyd's to appoint an actuary to the role of Lloyd's Actuary (LA), whose main statutory duty is to ensure that syndicate actuaries deliver their opinions and reports, set syndicate

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<sup>41</sup> *FSA Handbook* SUP 4.4.

<sup>42</sup> *FSA Handbook* SUP 4.6.

provisions if the opinion is not received, and prepare a statement to accompany the Lloyd's regulatory return<sup>43</sup>.

- A.19 As the LA is a unique postholder, this is not Reserved Work as defined in paragraph 18 of our *Scope & Authority*.

### Reviewing Actuary

- A.20 The *FSA Handbook* requires insurers carrying on long-term business to ensure that their auditor takes advice from a "suitably qualified" actuary independent of the firm, the Reviewing Actuary (RA)<sup>44</sup>.
- A.21 The duties of the RA are set out in the *FSA Handbook*<sup>45</sup>. The RA will report on the actuarial investigation prepared by the AFH.
- A.22 The work of the RA is not Reserved Work because it is the review of work performed by another actuary, the AFH, directly subject to BAS standards. Such work is excluded by paragraph 18 of our *Scope and Authority*.

### Reporting Actuary

- A.23 The Actuarial Profession's Guidance Note GN7 refers to the "Reporting Actuary", a role established by Schedule 9A of the Companies Act, introduced by the 1993 Regulations. The stipulations for this role now appear in the Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008 (SI 2008/410) Schedule 3 paragraph 52 (3).
- A.24 The regulations require that the long-term business provision of an insurer, as shown in the company accounts, be computed by a Fellow of the Institute or Faculty of Actuaries. This is therefore Reserved Work.

### OTHER FINANCIAL REPORTING

- A.25 Under the Companies Act 2006 an insurer's financial statements are required to include an assessment of the insurance liabilities. This assessment is therefore Required Work. The liabilities for long-term insurers are based on those included in the insurer's regulatory returns; thus they will be prepared by the AFH in life insurers. Actuaries are also likely to contribute a significant input into the determination of these liabilities in general insurers.
- A.26 Actuaries also produce components of the supplementary information provided under EV/MCEV rules for life insurers such as the new business value added (NBVA) and value of in force business (VIF).
- A.27 Insurers which are subsidiaries of overseas parents may be required to calculate insurance liabilities according to rules local to the jurisdiction of their parent. For example various statements of actuarial opinion are required from insurers and Lloyd's syndicates writing certain US business. Since these provisions and opinions are required by non-UK authorities they are outside the scope of our TASs (see paragraph 13 of the *Scope & Authority*).

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<sup>43</sup> *FSA Handbook* SUP 4.6.

<sup>44</sup> *FSA Handbook* IPRU(INS) Appendix 9.6 paragraph 4(b).

<sup>45</sup> *FSA Handbook* IPRU(INS) 9.35.

- A.28 Balance sheets and income statements provided to the UK tax authorities (HMRC) by insurers for the purposes of tax assessment include estimates of insurance liabilities. This is Required Work. These insurance liabilities may be a product of the same actuarial exercise as that performed for the purposes outlined in paragraph A.25.

### **RISK MONITORING AND CAPITAL ASSESSMENT**

- A.29 Assessment of the capital requirements of an insurance company is required by regulation as part of the FSA's ICAS (Individual Capital Adequacy Standards) regime for all insurers<sup>46</sup>. This is Required Work. It is customary for the calculations supporting this assessment (the Individual Capital Assessment, or ICA) to be done by an actuary. This might include advising on and performing appropriate stress and/or scenario tests.
- A.30 We anticipate a similar degree of actuarial involvement in the development and running of Solvency II internal models, which will serve a purpose similar to the ICA, although the ultimate responsibility for the models and their output lies with the risk function (as defined by Solvency II).
- A.31 Insurers also use actuaries to calculate required capital for other purposes such as the capital required to meet a desired security level as determined by a rating agency or its own internal economic capital threshold.

### **BUSINESS PLANNING**

- A.32 Business planning typically involves the development of financial projections. Since this includes making assumptions and building models to project premium revenue, claims, expenses and reserve development, many insurance companies use actuaries for significant parts of this process.
- A.33 In some circumstances, such as Lloyd's syndicates annual planning or in the application for a new permission to write insurance business, the plans must be submitted to a supervisory body for approval.

### **PRODUCT DESIGN AND PRICING**

- A.34 Actuaries frequently assist in the development of new insurance products, particularly by calculating technical prices. As with business planning, this typically involves recommending assumptions and building models to determine appropriate premium rates consistent with the company's minimum profit criteria. In life insurers, actuaries may also be used to develop new business quotation systems.
- A.35 Some life insurance products allow for the payment of a surrender value on the early termination of the policy by the policyholder. Actuaries often advise on the methods and assumptions used to calculate these surrender values.
- A.36 Some products allow for the variation of benefits and/or charges after policy issue. Actuaries provide advice on these variations. Sometimes contract terms require an actuary to be involved: in such cases, the work is Reserved Work.

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<sup>46</sup> *FSA Handbook INSPRU 7.1.*

**REINSURANCE**

- A.37 Most insurers rely on some form of reinsurance to help control risk and reduce earnings volatility. Actuaries may be involved in advising on the design of suitable reinsurance programmes including the modelling of alternative approaches and projecting the expected effects, and considering their capital efficiency.

**ASSET MANAGEMENT**

- A.38 Actuaries provide advice on investment strategies and asset management to insurance companies, particularly with regard to asset-liability matching and modelling.
- A.39 Some actuaries may be directly involved in asset management.

**TRANSACTION-RELATED ACTUARIAL INFORMATION AND RECOMMENDATIONS**

- A.40 Actuaries work on numerous transactions that involve insurance business. Areas where actuaries may be involved include mergers and acquisitions, Part VII transfers, schemes of arrangement, annuity buy-outs, reattributions of inherited estates and insurance or reinsurance contract commutations. Actuaries are used to provide advice on the assumptions and to develop models to be used to evaluate the transaction.
- A.41 Actuaries are often used as the Independent Expert required for a Part VII transfer. Guidance in the *FSA Handbook* states that in respect of a transfer of long-term business the Independent Expert should be an actuary<sup>47</sup>. In the case of a transfer of general insurance business the *FSA Handbook* guidance suggests that the Independent Expert is more likely than not to be an actuary<sup>48</sup>. Similarly, guidance from the FSA suggests that any reattribution of an inherited estate not effected by a Part VII transfer should be assessed by an actuary. This is not Reserved Work.

**CAPITAL MARKETS**

- A.42 Actuaries are increasingly becoming involved in capital market transactions to provide alternative sources of regulatory capital for insurers. These include such as value-in-force securitisations and alternative risk transfers such as catastrophe bonds and longevity deals. These deals tend to be relatively bespoke and the advice might include providing projections of financial results under various scenarios.
- A.43 Actuaries may also be involved in the pricing of other capital market instruments such as credit default swaps and other structured products.

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<sup>47</sup> *FSA Handbook* SUP 18.2.16.

<sup>48</sup> *FSA Handbook* SUP 18.2.17.

## B LIST OF DEFINITIONS AND PRINCIPLES

- B.1 This appendix lists the proposed purpose and scope of the insurance TAS, along with the proposed principles and associated definitions. The list is for convenience only. Readers should note that the principles cannot be seen in isolation, but should be read in the context of the discussion that explains them. Moreover, the proposals are intended to convey the general sense of the requirements that may appear in the TAS rather than the precise words that are likely to be used.

### PURPOSE OF THE TAS

- B.2 In the performance of work within the scope of the insurance TAS:
- a) managers and governing bodies of insurers are provided with sufficient relevant and comprehensible information to support decisions about the business;
  - b) managers and governing bodies of insurers are provided with sufficient information to support decisions that affect policyholder benefits or charges and to enable them to understand the implications for policyholders;
  - c) policyholders are provided with sufficient information to support their decisions about their insurance policies;
  - d) actuarial information conveys clearly the extent of the risk and uncertainty in the results it contains;
  - e) in the assessment of future cash flows the key issues that affect their variability or their discounted value are taken into account and given the appropriate weight; and
  - f) calculations are accurate, are carried out using methods which are fit for purpose, and use appropriate assumptions. (paragraph 2.12)

### GENERAL CONCEPTS AND PRINCIPLES

- B.3 (Definition) A matter is **material** if, at the time the work is performed, it (or information resulting from it) could influence the decisions to be taken by users. A matter that is **immaterial** when considered in isolation may be material when considered in conjunction with others. (paragraph 3.2).
- B.4 Judgements concerning the application of this standard shall be exercised in a reasoned and justifiable manner (paragraph 3.7).

### SCOPE

- B.5 We are proposing that the following work should be within the scope of the insurance TAS (paragraph 4.73):
- a) determining insurance liabilities for regulatory reporting purposes (paragraphs 4.14 to 4.16);

- b) assessing insurance liabilities for Companies Act and other statutory financial reporting purposes (paragraphs 4.18 to 4.23);
  - c) work for the auditor concerning an insurer's determination of insurance liabilities (paragraphs 4.19 to 4.20);
  - d) determining Embedded Values for financial statements (paragraphs 4.21 to 4.23);
  - e) assessing regulatory capital requirements (paragraphs 4.24 to 4.27);
  - f) actuarial information supporting the exercise of discretion by insurers, and information provided to policyholders about the exercise of discretion (paragraphs 4.52 to 4.59);
  - g) actuarial information used in product design and pricing (paragraphs 4.60 to 4.62);
  - h) actuarial information used in business planning (paragraphs 4.28 to 4.29);
  - i) actuarial information supporting setting the premium for reinsurance to close in a Lloyd's syndicate (4.41 to 4.42);
  - j) asset-liability modelling (paragraph 4.44); and
  - k) work related to opining on underwriting policy and reinsurance arrangements (paragraphs 4.45 to 4.46).
- B.6 We are proposing that the following work (as well as possibly being included in the insurance TAS) should be in the scope of other TASs to be developed by the BAS (paragraph 4.74):
- a) pension fund reporting in financial statements (paragraphs 4.21 to 4.23);
  - b) determining Embedded Values for financial statements (paragraphs 4.21 to 4.23); and
  - c) work performed as in independent expert or for the use of an independent expert in transactions such as Part VII transfers, schemes of arrangement and in an estate reattribution (paragraphs 4.63 to 4.68).
- B.7 We are proposing that the following work should not be in the scope of the insurance TAS (paragraph 4.75):
- a) decisions in business planning, product design and pricing (paragraphs 4.28 to 4.29 and 4.60 to 4.62)); and
  - b) investment work other than asset-liability modelling (paragraphs 4.43 to 4.44).
- B.8 We are asking for the views of respondents on whether the following work should be in the scope of the insurance TAS (paragraph 4.76):
- a) capital assessment and allocation work performed for purposes other than regulatory compliance (paragraphs 4.30 to 4.32);

- b) work performed for one of the parties involved in a merger or acquisition, commutation or capital raising exercise (paragraphs 4.34 to 4.40);
- c) actuarial information used in the determination of performance related pay (paragraph 4.47);
- d) actuarial information provided to risk committees (paragraphs 4.48 to 4.50);
- e) work performed for one of the parties to a transaction in which an independent expert is involved (paragraphs 4.63 to 4.68); and
- f) Reserved Work arising from other than regulatory and legislative obligations (paragraphs 4.69 to 4.71).

## **DATA**

- B.9 (Definition) A collection of facts or information usually collected from records or as the result of experience or observation. Examples include membership or policyholder data, claims data, asset and investment data, operating data (such as expenses), benefit definitions and policy terms and conditions (paragraph 5.4).
- B.10 Data available for insurance work should be assessed not only for accuracy, relevance, and completeness but also for its reliability as a predictor of the future. The dataset chosen should be as up to date as possible, and include suitable elements from the insurer's own experience and, subject to availability, external information (paragraph 5.18).
- B.11 When the data is of doubtful quality or likely to be a poor predictor of the future, steps should be taken to supplement or adjust the data, when it is considered that this would result in a proportionate improvement in the reliability of the results (paragraph 5.20).

## **ASSUMPTIONS**

### **General principles**

- B.12 The selection of assumptions should take account of the purpose of the calculations for which they will be used (paragraph 6.13).
- B.13 The selection of assumptions for work within the scope of this standard should be justifiable from the available data (paragraph 6.16).
- B.14 The selection of assumptions should take account of any material events known to have occurred after the effective date of the data (paragraph 6.20).
- B.15 For work performed at regular intervals, assumptions should be changed only if justified by new data. Matters that should be explained to the user include the rationale for the change, including whether the change is driven by experience or by an expectation that future events will differ from the past, and the overall impact of the change on the results (paragraph 6.22).
- B.16 No adjustment should be made to any assumption to compensate for a shortcoming in another assumption (paragraph 6.24).

**Specific assumptions**

- B.17 The relationship between the selected discount rate and a low risk rate should be explained to the user (paragraph 6.32).
- B.18 Any illiquidity premium included in the discount rate should be disclosed and the rationale for its selection explained (paragraph 6.39).
- B.19 Separate assumptions should be selected for current rates of mortality and for future changes to mortality rates (paragraph 6.47).
- B.20 Separate assumptions should be selected for current rates of morbidity incidence and other probabilities affecting claims and for future changes to these rates (paragraph 6.49).
- B.21 Assumptions about the exercise of management discretion should take account of past experience and information about the insurer's intentions, particularly in stressed scenarios (paragraph 6.57).
- B.22 The rationale for any material change in anticipated running costs from current levels should be explained and the impact on results disclosed (paragraph 6.60).
- B.23 In estimating insurance liabilities and their variability, explicit allowance should be made for potential events which, while having a very low probability, would have a very serious financial impact (paragraph 6.68).

**Specific areas of work**

- B.24 In estimating insurance liabilities and their variability, explicit allowance should be made for changes in the co-dependencies of risks in scenarios of high stress compared with those of low stress (paragraph 6.79).

**MODELS AND CALCULATIONS****Modelling risk**

- B.25 Reports on capital assessment should discuss the liquidity risk including any mismatching of income and outgo cash flows taking account of the volatility in claims experience (paragraph 7.10)

**Modelling capital requirements**

- B.26 In the assessment of insurance liabilities or their variability, alternative assumptions should be tested to help evaluate the uncertainty of the results (paragraph 7.18).

**Stress testing and scenario analysis**

- B.27 Information on the risks being run by an insurer should include scenarios under which the ability of the firm to meet its obligations to policyholders in full would be impaired (paragraph 7.23).

## **REPORTING**

### **Validation of results in reports**

- B.28 When selecting assumptions for actuarial calculations that are performed regularly, the assumptions used in previous calculations should be compared with emerging experience and the results used to inform the selection of the new assumptions (paragraph 8.10).

### **Best estimates and prudent estimates**

- B.29 In the assessment of insurance liabilities, any prudent estimate of liabilities that is presented should be accompanied by a best estimate. The change in the level of prudence from that in the previous such assessment should be explained to users (paragraph 8.19).

## C MEMBERS OF THE BOARD AND WORKING GROUP

### THE BOARD FOR ACTUARIAL STANDARDS

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