



**BOARD FOR ACTUARIAL STANDARDS**

**INSURANCE TECHNICAL ACTUARIAL STANDARD**

**NOVEMBER 2010**

# INSURANCE TAS

**Status**

This standard (the Insurance TAS) is a Specific Technical Actuarial Standard (Specific TAS), as defined in the *Scope & Authority of Technical Standards (Scope & Authority)* of the Board for Actuarial Standards (BAS).

This standard should be read in the context of the *Scope & Authority*.

The *Scope & Authority* sets out circumstances in which material departures from this standard are permitted or required and the disclosures which are required in respect of them.

A separate document, *Insurance TAS: Significant Considerations*, issued at the same time as this standard, reviews the considerations and arguments that were thought significant by the BAS in developing this standard.

**Scope**

This standard applies to the work specified in Part C of the standard.

Wider adoption is encouraged.

**Commencement**

This standard applies to Reserved Work completed on or after, and work performed for aggregate reports completed on or after, 1 October 2011.

Earlier adoption is encouraged.

**Relationship with other TASs and with Guidance Notes**

This standard sets out principles to be adopted across the range of work to which it applies, as described above. The Generic TASs apply and other Specific TASs may apply to work that is within the scope of this standard, setting out additional principles that should be adopted.

In the event of a conflict between this standard and a Guidance Note adopted by the BAS (as described in the *Scope & Authority*), this standard shall prevail.

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## A PURPOSE OF THE INSURANCE TAS

### A.1 PURPOSE

A.1.1 The BAS's Reliability Objective is that the **users**<sup>1</sup> 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.

A.1.2 The purpose of this standard is to assist the achievement of the Reliability Objective by ensuring that in the performance of work within its scope:

- actuarial information provided to managers and the governing body of an **insurer** is relevant, comprehensible and sufficient to support decisions about the business and includes information on risk and uncertainty and, if those decisions affect policyholders' benefits, on the implications for policyholders;
- actuarial information provided to policyholders is relevant, comprehensible and sufficient for its purpose;
- calculations are carried out using **measures, methods** and assumptions which are fit for purpose and are performed correctly; and
- the key issues that affect the variability or discounted value of projected cash flows are taken into account and given the appropriate weight.

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<sup>1</sup> Terms appearing in **bold** in the text are explained in the Definitions set out in Part B.

## B INTERPRETATION

### B.1 INTERPRETATION OF THE TEXT

- B.1.1 All text in this standard has equal status unless stated otherwise. Paragraphs setting out explicit principles are emphasised with boxes for convenience.
- B.1.2 The **Scope & Authority**<sup>2</sup> 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. The contents of this standard should be read in that context, even where the term **material** is not explicitly used or where the word “shall” is used.
- B.1.3 Nothing in this standard should be interpreted as requiring work to be performed that is not proportionate to the scope of the decision or assignment to which it relates and the benefit that **users** would be expected to obtain from the work. What work is proportionate is a matter for judgement and might depend on factors such as the expertise of **users** in the matters being reported on and their needs.
- B.1.4 Part C of this standard includes references to actuarial work. What constitutes actuarial work depends on matters such as whether **users** would reasonably expect the work to be performed using actuarial techniques, and whether the work involves risk, uncertainty or modelling. Actuarial work often involves the exercise of judgement. Some work performed by actuaries might not be actuarial work.
- B.1.5 The form that is taken by any explanations, rationales, descriptions, indications or other analyses required by this standard will need to depend on the scope of the work performed and the benefit to **users**. The level of detail required is a matter for judgement. Unless stated otherwise, analyses may be quantitative or qualitative.
- B.1.6 Lists are not intended to be exhaustive.
- B.1.7 This standard should be interpreted in the light of the purpose set out in Part A.

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<sup>2</sup> Paragraph 23 of the **Scope & Authority**.

## B.2 DEFINITIONS

B.2.1 Terms appearing in **bold** in the text are used with the meanings set out below. Some of the definitions are taken from the **Scope & Authority**. The definitions are used consistently in the **Scope & Authority** and other BAS standards.

<b>aggregate report</b>	The set of all <b>component reports</b> relating to a piece of work within the scope of this standard. The <b>aggregate report</b> for a decision taken by a <b>user</b> in connection with work within the scope of this standard is the set of all <b>component reports</b> containing information <b>material</b> to that decision.
<b>component report</b>	A document given to a <b>user</b> in permanent form containing <b>material</b> information which relates to work within the scope of this standard. A <b>component report</b> may be given to the <b>user</b> in hard copy or electronically. Formal written reports, draft reports, emails and presentations are examples of <b>component reports</b> . Possible contents of <b>component reports</b> include tables, charts and other diagrammatic presentations as well as or instead of text. A <b>component report</b> may form part of one or more <b>aggregate reports</b> .
<b>data</b>	Facts or information usually collected from records or from experience or observation. Examples include membership or policyholder data, claims data, asset and investment data, operating data (such as administrative or running costs), benefit definitions and policy terms and conditions.
to <b>document</b>	To record in <b>documentation</b> .
<b>documentation</b>	Records of facts, opinions, explanations of judgements and other matters. <b>Documentation</b> may be paper or electronic based. It is not necessarily provided to <b>users</b> . <b>Documentation</b> is <b>material</b> if it concerns a <b>material</b> matter.
<b>Generic TAS</b>	A Technical Actuarial Standard which applies to all work specified in the Schedule to the <b>Scope &amp; Authority</b> .
<b>implementation</b>	The formulae and algorithms of a <b>model</b> in a form that will perform the calculations required by the <b>specification</b> .  In many cases an <b>implementation</b> is a computer program, but other types of <b>implementation</b> are possible – for instance, manual calculations are often used for simple <b>models</b> .
<b>insurance business</b>	The business of effecting or carrying out contracts of insurance.

<b>insurance transformation</b>	A change without all the policyholders' consents in the contract terms of a portfolio of insurance contracts or in the with-profits principles contained in the Principles and Practices of Financial Management.
<b>insurer</b>	A body effecting or carrying out contracts of insurance.
<b>material</b>	Matters are <b>material</b> if they could, individually or collectively, influence the decisions to be taken by <b>users</b> of the related actuarial information. Assessing <b>materiality</b> is a matter of reasonable judgement which requires consideration of the <b>users</b> and the context in which the work is performed and reported.
<b>measure</b>	The approach that is used to define how an (uncertain) asset or liability amount is quantified. Two different <b>measures</b> of the same asset or liability may produce different results.
<b>method</b>	The mechanism that is used to quantify an (uncertain) asset or liability amount. Two different <b>methods</b> of calculating the same asset or liability <b>measure</b> should produce similar results.
<b>model</b>	A representation of some aspect of the world which is based on simplifying assumptions.  A <b>model</b> is defined by a <b>specification</b> that describes the matters that should be represented and the inputs and the relationships between them, implemented through a set of mathematical formulae and algorithms, and realised by using an <b>implementation</b> to produce a set of outputs from inputs in the form of <b>data</b> and parameters.
<b>neutral</b>	A <b>neutral measure</b> , assumption or judgement is one that is not deliberately either optimistic or pessimistic and does not incorporate adjustments to reflect the desired outcome. A <b>neutral</b> estimate is one that is derived using <b>neutral measures</b> , assumptions and judgements. There may be a range of <b>neutral</b> estimates, reflecting inherent uncertainty.
<b>report</b>	An <b>aggregate report</b> or a <b>component report</b> .
<b>Scope &amp; Authority</b>	The BAS's <i>Scope &amp; Authority of Technical Actuarial Standards</i> .
<b>Specific TAS</b>	A Technical Actuarial Standard that is not designated by the BAS as a <b>Generic TAS</b> . A <b>Specific TAS</b> is limited to a specific, defined context.
<b>specification</b>	A description of a <b>model</b> that describes the matters to be represented, the inputs and their interactions with each other, and the outputs to be produced.

**users**

Those people whose decisions a **report** is intended (at the time of writing) to assist. Those to whom the **report** is addressed, regulators and third parties for whose benefit a **report** is written are examples of possible **users**.



## C SCOPE

### C.1 WORK WITHIN THE SCOPE OF THIS STANDARD

C.1.1 Work that is within the scope of this standard may also be within the scope of other BAS standards. In particular, the **Generic TASs**, on *Reporting Actuarial Information, Data and Modelling*, apply to all such work.

#### Reserved Work

C.1.2 This standard shall apply to all Reserved Work concerning **insurance business**.

C.1.3 Reserved Work is defined in the **Scope & Authority**.

C.1.4 This standard also applies to some work that is not Reserved Work.

#### Financial reporting

C.1.5 This standard shall apply to actuarial work concerning **insurance business** performed to enable an **insurer** or its parent undertakings to prepare financial statements that are intended to give a true and fair view of their financial position and profit or loss (or income and expenditure) other than actuarial work that is within the scope of the **Specific TAS** on *Pensions*.

C.1.6 The work described in paragraph C.1.5 that is within the scope of the **Specific TAS** on *Pensions* is preparing information on:

- an **insurer's** or its parent undertakings' pension scheme(s) for the purpose of complying with *International Accounting Standard 19* or *Financial Reporting Standard 17*; and
- directors' pension arrangements.

C.1.7 This standard shall apply to actuarial work concerning **insurance business** performed to enable an **insurer** or its parent undertakings to fulfil their obligations to their regulators and to the tax authorities.

C.1.8 The work described in paragraphs C.1.5 and paragraph C.1.7 includes:

- determining an **insurer's** technical provisions;
- providing the confirmation required under the *General Insurers' Technical Provisions (Appropriate Amount) (Tax) Regulations 2009*;
- providing actuarial information to support the **insurer's** assessment of the amount of regulatory capital it requires;
- providing an opinion on the technical provisions of a Lloyd's syndicate writing general insurance business; and
- providing the opinions required under article 48 of *Directive 2009/138/EC* (the Solvency II directive) on an **insurer's** overall underwriting policy and adequacy of reinsurance arrangements.

C.1.9 This standard shall apply to actuarial work performed to enable an **insurer** or its parent undertakings to report an embedded value to their shareholders or members.

C.1.10 The work in paragraphs C.1.5, C.1.7 and C.1.9 includes:

- providing information to support the choice of appropriate **measures** and **methods** to use;
- providing information to support the setting of assumptions; and
- making any required calculations.

C.1.11 This standard shall apply to actuarial work concerning **insurance business** performed by an auditor's expert to support the auditor's opinion on an **insurer's** or its parent undertakings' financial statements that are intended to give a true and fair view of their financial position and profit or loss (or income and expenditure) and their regulatory returns other than actuarial work that is within the scope of the **Specific TAS** on *Pensions*.

## Pricing

C.1.12 This standard shall apply to actuarial work that supports the development and implementation of pricing frameworks for products provided by an **insurer**.

C.1.13 The work described in paragraph C.1.12 includes:

- providing information to support the choice of appropriate **measures** and **methods**;
- providing information to support the setting of assumptions; and
- developing pricing **models** to support the determination of premium rates or product charges for groups of related products.

C.1.14 This standard shall apply to actuarial work that supports the determination of the premium or charges for any single insurance contract that is a significant risk to the **insurer**.

C.1.15 The work described in paragraph C.1.12 and C.1.14 does not include commercial decisions concerning the actual premiums charged or product charges levied.

### **Business reorganisations**

C.1.16 This standard shall apply to actuarial work performed in an **insurance transformation**.

C.1.17 The work described in paragraph C.1.16 includes work:

- for or as an independent expert required by a Part VII transfer or scheme of arrangement;
- for a policyholder advocate in an inherited estate reattribution; and
- for any party to an **insurance transformation**.

C.1.18 This standard shall apply to actuarial work supporting an intended sale or purchase of an **insurer**, a sale or purchase of a block of insurance contracts, an insurance commutation or a capital raising exercise concerning **insurance business** other than actuarial work related to an **insurer's** employee pension scheme(s).

C.1.19 The work in paragraph C.1.18 includes:

- supporting the assessment of the value of the business intended to be sold, purchased, commuted or securitised; and
- supporting the development or assessment of financial projections.

C.1.20 This standard shall apply to actuarial work supporting the determination of the premium for reinsurance to close of a Lloyd's syndicate.

C.1.21 The work described in paragraphs C.1.18 and C.1.20 does not include the commercial decision concerning the actual price at which a transaction is to be completed.

### **The exercise of discretion**

C.1.22 This standard shall apply to actuarial work concerning the post-sale exercise of discretion by an **insurer** which affects policyholders' premiums or benefits.

C.1.23 The work in paragraph C.1.22 includes:

- enabling an **insurer** to take decisions on the discretion to be exercised;
- providing information to the governing body of an **insurer** with with-profits long-term business on the key aspects of the discretion exercised;
- supporting the person or persons providing an independent assessment of an **insurer's** compliance with its Principles and Practices of Financial Management;
- supporting an **insurer's** annual report to its with-profits policyholders; and
- supporting the setting of risk or other charges for unit-linked business.

C.1.24 The work in paragraph C.1.22 does not include:

- decisions about the validity of claims; or
- individual benefit projections provided to policyholders.

## D GENERAL PRINCIPLES

### D.1 INTRODUCTION

D.1.1 This Part contains general principles relating to actuarial work in insurance that support the purpose of this standard set out in Part A. It should be interpreted as described in Part B. It applies to the work specified in Part C.

#### Judgement

D.1.2 Judgements concerning the application of this standard shall be exercised in a reasoned and justifiable manner.

D.1.3 Judgement might be needed on matters such as:

- whether the work is within the scope of this standard;
- the derivation of assumptions; and
- the selection of **models**.

D.1.4 This standard does not require the **documentation** or disclosure of judgements concerning its application unless stated otherwise.

### D.2 ASSUMPTIONS

#### General considerations

D.2.1 Paragraphs D.2.2, D.2.3 and D.2.8 do not apply to assumptions used in **models** if the assumptions are specified in regulations or in some other legal document governing the work, or are determined by the **user**.

D.2.2 Assumptions used in, or proposed for use in, **models** shall be appropriate for the purpose of the calculations for which they are used.

D.2.3 Assumptions used in, or proposed for use in, **models** shall be derived from as much relevant information as is sufficient or, if there is insufficient relevant information, as is available.

D.2.4 What information is relevant is a matter for judgement and might depend on factors such as the effective date of the calculations, and the purpose and the nature of the calculations for which the assumptions will be used. Information that might be relevant includes matters such as:

- financial and economic outlooks;
- mortality and other demographic projections; and
- recent claims experience if it is statistically useful.

- D.2.5 If there is substantial relevant information from which assumptions for use in **models** might be derived, what relevant information is sufficient is a matter for judgement and might depend on factors such as the cost of obtaining additional relevant information, the benefit that **users** receive from the use of additional relevant information and the degree of uncertainty that **users** are prepared to accept.
- D.2.6 If there is limited relevant information from which assumptions for use in **models** might be derived, what relevant information is available is a matter for judgement and might depend on factors such as the cost of obtaining additional relevant information and the time it takes to collect. The limited relevant information that is available might need to be supplemented by other information which serves as a proxy, and by judgement.
- D.2.7 The selection of assumptions might also take account of any **material** events which are known to have occurred after the effective date of the calculations.

D.2.8 No adjustment shall be made to any assumption used in, or proposed for use in, a **model** to compensate for a shortcoming in another unrelated assumption.

#### **Discount rates**

D.2.9 For work which includes the determination of present values of cash flows, **aggregate reports** shall explain:

- a) the derivation of the discount rates;
- b) the rationale for the inclusion of and the derivation of any illiquidity premium included in the discount rates;
- c) the implications of adopting the discount rates; and
- d) the cash flows that are being discounted.

- D.2.10 An explanation of the derivation of discount rates might need to include matters such as:
- a comparison with low credit risk rates, such as rates based on nominal gilt or swaps yield curves published by the Bank of England;
  - the return expected from the **insurer's** assets and any mismatch between the cash flows expected from the assets and the liabilities;
  - a description of any **model** used to assist the setting of discount rates including the assumptions underlying it and its limitations; and
  - a range of reasonable alternative discount rates.

D.2.11 An explanation of the implications of adopting particular discount rates might need to include matters such as:

- the possible effect on solvency levels;
- the possible effect on profitability in a pricing exercise; and
- the impact on the assessment of value when considering the intended acquisition of a block of insurance contracts.

### Claim rates

D.2.12 If assumptions about claim rates are used in, or proposed for use in, an exercise requiring the projection of claims over a number of years there shall be separate assumptions for base claim rates and for subsequent changes to those rates.

D.2.13 The assumption for subsequent changes could be that there will be no change.

D.2.14 Claims assumptions shall allow explicitly for reasonably foreseeable events which would have a significant financial impact even though they might have a low probability.

D.2.15 The explicit allowance could be nil.

### Running costs

D.2.16 **Aggregate reports** for work that includes projections of the cost of running the **insurer** shall explain the rationale for any **material** change in the level of future running costs from the current level and the implications for the results.

D.2.17 A change in the level of running costs arising solely from inflation or a change in the volume of business might not be **material**.

### Co-dependencies of risks

D.2.18 **Aggregate reports** for work that includes stressed scenarios and uses assumptions about the co-dependencies of risks shall:

- a) describe the changes between assumptions about the co-dependencies used in the stressed scenarios and those used in other scenarios; and
- b) if there are no changes between assumptions about the co-dependencies used in the stressed scenarios and those used in other scenarios explain why there are no changes.

### D.3 MODELS AND CALCULATIONS

#### Changes in measures, methods or assumptions

D.3.1 **Aggregate reports** shall explain any changes in the **measures, methods** or assumptions between two similar and related exercises and quantify the overall effect on results.

D.3.2 Whether two exercises are similar and related is a matter for judgement. The two exercises might be, but need not necessarily be, consecutive exercises such as the annual determination of an **insurer's** technical provisions to be included in its true and fair financial statements. Two exercises might be similar but not related if:

- they are separated by a significant passage of time; or
- they relate to different insurance risks.

D.3.3 An assumption might concern the **specification** of a **model** rather than a particular numerical parameter. For example:

- if an economic parameter is linked to an index a change in the value of that index over the period might not constitute a change in assumptions. A change in the relationship between the parameter and the index or the use of a different index would be a change in assumptions; and
- in a link ratio **model** in which link ratios are automatically recalculated from period to period as new **data** is received, the change in link ratios might not constitute a change in assumptions. The use of a different **data** set to determine link ratios would be a change in assumptions.

#### Claims

D.3.4 The **documentation** of **models** used to project claim payments shall explain how the **model** allows for claim frequencies and severity.

D.3.5 This explanation might need to include:

- the definition of claim frequency such as notified claims or settled claims;
- the treatment of the incidence and severity of large claims; and
- the treatment of rates of incidence of morbidity and recovery in sickness insurance.



#### D.4 PRUDENT ESTIMATES

D.4.1 **Aggregate reports** for work supporting the determination of a prudent estimate of the technical provisions of an **insurer** shall explain:

- a) the relationship between the prudent estimate and a **neutral** estimate of the liabilities; and
- b) any change to the relationship between the prudent and **neutral** estimates from the previous exercise of the same type, if any.

D.4.2 An explanation of the relationship between a **neutral** and a prudent estimate of the liabilities might need to include matters such as:

- a description of the level of prudence in the prudent estimate;
- a presentation of an approximate **neutral** estimate alongside the prudent estimate; and
- a comparison of the assumptions underlying the **neutral** estimate with the assumptions underlying the prudent estimate and an explanation of the differences.

## E THE EXERCISE OF DISCRETION IN LONG-TERM INSURANCE BUSINESS

### E.1 INTRODUCTION

E.1.1 This Part applies to work concerning long-term insurance business in which the exercise of discretion is permitted by contract. It should be interpreted as described in Part B.

E.1.2 Examples of situations in which discretion might be exercised are:

- the management of with-profits business;
- determining risk charges on unit-linked policies; and
- unit pricing.

### E.2 EXERCISE OF DISCRETION

E.2.1 **Aggregate reports** for work which requires projecting cash flows under alternative scenarios shall describe how any changes in the assumption about the way discretion is exercised in the alternative scenarios considered are consistent with the fair treatment of the policyholders affected.

E.2.2 The ability to exercise discretion might enable an **insurer** to take action to protect the interests of continuing policyholders. Such actions might include:

- increasing surrender penalties if the market value of assets falls sharply; and
- postponing surrenders from or switches out of funds linked to illiquid asset classes.

E.2.3 **Aggregate reports** advising or reporting on the exercise of discretion shall indicate the effects of the exercise of discretion proposed or taken on policyholders and on any with-profits estate.

E.2.4 The indication of the effects of the exercise of discretion on policyholders might need to include a description of the impact on their benefits of any change in:

- the Principles and Practices of Financial Management;
- bonus policy;
- investment policy;
- the level of charges for risk or expenses; and
- smoothing policy or asset share charges.

E.2.5 If an **insurer** exercises its discretion to use any with-profits estate as working capital to support its business plans, the indication of the effects on the estate might need to include a description of the rate of return expected and the timing of that return.

E.2.6 When reporting to policyholders on the exercise of discretion the work performed to confirm that their information needs have been taken into account shall be <b>documented</b> .
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E.2.7 **Documentation** might need to include a description of any assumptions made about policyholders' financial capability to understand matters which affect the amount of the policy benefits they receive.

## F GENERAL INSURANCE BUSINESS WRITTEN BY LLOYD'S SYNDICATES

### F.1 INTRODUCTION

F.1.1 This Part applies to work performed for Lloyd's syndicates writing general insurance business. It should be interpreted as described in Part B.

### F.2 REPORTING

F.2.1 Work supporting the provision of an opinion confirming that the technical provisions for each syndicate year of a Lloyd's syndicate writing general insurance business are no less prudent than a best estimate of the amounts required shall be described in a document which shall include sufficient information to allow the syndicate's managing agent and the Lloyd's Actuary to understand the work performed.

F.2.2 The document will need to be a single document in permanent form.

F.2.3 The document will need to include the information that an **aggregate report** describing the work performed would include. Part D and the **Generic TASs** on *Modelling* and *Reporting Actuarial Information* contain the principles for the information that an **aggregate report** shall provide.

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**FINANCIAL REPORTING COUNCIL**

**5TH FLOOR**

**ALDWYCH HOUSE**

**71-91 ALDWYCH**

**LONDON WC2B 4HN**

**TEL: +44 (0)20 7492 2300**

**FAX: +44 (0)20 7492 2301**

**WEBSITE: [www.frc.org.uk](http://www.frc.org.uk)**

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Registered Office: 5th Floor, Aldwych House, 71-91 Aldwych, London WC2B 4HN.