



Financial Reporting Council

Technical Actuarial Guidance

Proportionality

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1 Introduction

Purpose

- 1.1 The FRC issues guidance for a number of specific purposes, for example to support compliance with requirements, or for interpretive, explanatory, contextual or educational purposes to support the use of judgement in applying principles-based standards. The overall purpose of the FRC's guidance is to improve the quality of technical actuarial work. The guidance is persuasive not prescriptive, and compliance is encouraged.
- 1.2 The purpose of this guidance is to assist practitioners in applying proportionality when complying with the requirements of the TASs.
- 1.3 Paragraph 1.4 of TAS 100 says:

In applying judgement to the application of the TASs it is important to be guided by the **reliability objective**.

The TAS 100 glossary defines the reliability objective as follows:

To allow the **intended user** to place a high degree of reliance on **actuarial information**, practitioners must ensure the **actuarial information**, including the **communication** of any inherent uncertainty, is relevant, based on transparent assumptions, complete and comprehensible.

- 1.4 The defined terms used in TAS 100 apply to this guidance.

Intended Audience

- 1.5 This guidance is aimed at practitioners who require guidance in exercising judgement in respect of proportionality in the application of the TASs.

2 Materiality and Proportionality

Interpretation

- 2.1 The reliability objective underpins the TASs and, as stated in paragraph 1.3 of TAS 100, it is important to be guided by it when applying the requirements of TAS 100.
- 2.2 The intent is that the requirements of the TASs should be met in a way that is proportionate to the nature, scale and complexity of the decision or assignment to which the technical actuarial work relates and the benefit that the intended user would be expected to obtain from the work.
- 2.3 Paragraph 1.5 of TAS 100 says:

Practitioners are encouraged to have regard to the guidance that accompanies this Standard and, in particular, the guidance on proportionality, to inform how they will comply with this Standard.

TAS Principles and Application

- 2.4 Paragraphs 1.8, 1.9 and P6.2 of TAS 100 set out the following:

- 1.8 This standard consists of Principles and related Application Statements. The Principles set out mandatory requirements.
- 1.9 The Application Statements set out regulatory expectations. Practitioners must have regard to these regulatory expectations; divergence may be acceptable, but **material** deviations must be justified. The justification must demonstrate how compliance with the relevant Principles has been achieved despite not meeting regulatory expectations.
- P6.2 In case of a **material** deviation from regulatory expectations, practitioners must **document** the required justification (see 1.9).

- 2.5 When considering TAS requirements, practitioners are encouraged to consider which provisions and regulatory expectations are relevant to their work. Once this consideration has been made, practitioners could then consider how to apply proportionality, to inform the extent of their efforts to meet the TAS requirements.

2.6 In considering how to apply proportionality, some of the following could be considered:

- The extent to which judgement is required.
- The materiality of the matter in absolute or relative terms (see below).
- The significance of the piece of work including any financial, reputational or other consequences for the intended user.
- The complexity of the matter under consideration.
- The knowledge and expertise of the intended user.
- Whether the work is a component of a larger task.

Materiality

2.7 The TAS 100 Glossary defines 'material' as follows:

Matters are **material** if they could, individually or collectively, influence the significant or relevant decisions that could be taken by an **intended user**. Assessing whether a matter is **material** is a matter for judgement and therefore subjective, requiring consideration of the objectives underpinning the **technical actuarial work**, the expectations and experience of the **intended user** and other considerations, such as the significance of resulting commercial or practical implications.

2.8 To give more visibility of the need to consider materiality, the word 'material' is included in several places within the standard.

2.9 When determining whether a matter is material, practitioners are encouraged to consider the extent and significance of the judgements that are required. Certain work might be more mechanical in nature, which might be the case when reapplying a series of predefined steps or instructions. In these circumstances, it could be reasonable to assume that the actuarial information contains fewer material matters for consideration by an intended user compared to work where more judgements are made, or the judgements are more significant.

2.10 Certain requirements apply only where a matter is material. When determining whether a matter is material, practitioners may wish to consider:

- What might change over time as the needs and circumstances of the intended user changes.
- If other practitioners would arrive at the same view. This consideration recognises the fact that a range of valid opinions could exist that could help to inform a practitioner's final view on materiality.

2.11 For example, the Principle 1 (Risk identification) only requires regard to be had to relevant material factors and relevant material risks. If a relevant risk is identified but is clearly not material in the context of the work carried out, then it is considered good

practice to note this and do nothing further in relation to this risk. In concluding that the relevant risk is not material, it would be helpful for the practitioner to consider how other practitioners would regard this risk.

- 2.12 When exercising judgement which is not deemed to be material, then Principle 2 (Judgement) would need to be considered, but as P2.1 to P2.4 relate to material judgements, these would not be applicable in relation to this particular judgement.

‘Sufficient’ and ‘appropriate’

- 2.13 To give additional visibility for the application of proportionality to comply with TAS requirements, the words ‘sufficient’ and ‘appropriate’ are included within the TAS principles and provisions. These words give flexibility to practitioners to decide how best to meet TAS requirements.
- 2.14 As an example, Principle 5 (Models) requires practitioners to ensure ‘models used in their technical actuarial work’ be ‘fit for purpose and subject to sufficient controls and testing, so that the intended user can rely on the resulting actuarial information’. This requirement allows a practitioner to decide the extent of the controls and testing necessary to give assurance that models are fit for purpose.
- 2.15 Similarly, P5.2 requires an ‘appropriate level’ of model governance, requiring the practitioner to judge what is appropriate in relation to the work being carried out.
- 2.16 Principle 6 (Documentation) requires documentation to contain ‘sufficient detail’ to allow technically competent persons responsible for reviewing or providing assurance in relation to the technical actuarial work to understand the matters involved and assess the judgements made. This allows the practitioner to consider whether the work will be reviewed or subject to assurance, and by whom and, based on this, decide on the level of detail required.

Communications

- 2.17 Principle 7 (Communications) requires the practitioner to exercise judgement in the amount of detail to include in communications. P7.3 requires the exclusion of non-material actuarial information from communications if the inclusion of this information would obscure material actuarial information, unless the inclusion of such information is a regulatory requirement.
- 2.18 A practitioner may also find it helpful to include a general statement that they have exercised non-material judgements, but these judgements do not warrant further commentary given their low materiality. This will depend on whether such communication could distract the intended user from focussing on material actuarial information.
- 2.19 Divergences from the communications requirements within the Application statements are acceptable if unlikely to have a material impact on the decisions of intended users. This should ensure that a practitioner’s communications remain focussed on the material actuarial information that could significantly influence the decisions an intended user will make.

3 Scenarios

This section contains several illustrative examples in the form of hypothetical scenarios. The intention is not for these scenarios to act as templates for practitioners to apply as many plausible variants to the depictions are possible. Instead, the intention of the scenarios is to provide a guide for practitioners on higher-level considerations on how proportionality and materiality could be applied for different areas of work. Practitioners are invited to consider all the scenarios to form their own judgements dependent on their specific circumstances.

Scenario 1: Non-material Judgement – life insurance

- 3.1 A life insurer underwrites very little morbidity risk and as a result the solvency ratio of the insurer's complete portfolio is relatively insensitive to changes to morbidity assumptions. For this reason, the practitioner has decided to review the morbidity valuation assumptions only once every three years.
- 3.2 The judgement exercised is that reducing the frequency of review of this solvency valuation assumption will not have a significant impact on the overall outcome of the solvency assessment of the insurer's portfolio of liabilities and will thus not materially affect any decisions taken based on that outcome. Further, the reduced frequency of review will save time (and cost).
- 3.3 The practitioner is mindful of the need to communicate the rationale for the material judgements to the Board to satisfy TAS 100 requirements and wants to avoid distracting the Board with information on less material judgements that could obscure their focus. The practitioner considers the merits of a general statement to say non-material judgements have been exercised, but these judgements do not warrant further commentary given their low materiality. On balance, the practitioner believes that such a statement would be useful to the extent that it evidences additional work as having been performed. If invited to talk about the non-material judgements, the practitioner believes any questions from the Board could quickly be closed out to keep discussions on track. The statement is also likely to be relevant to any colleagues carrying out peer review and to the firm's auditors.

Scenario 2: Material Judgement – life insurance

- 3.4 The same life insurer has a significant portfolio of annuity contracts and it is known from past experience that the outcome of the solvency valuation of the insurer's portfolio as a whole is highly sensitive to the annuitant mortality assumptions.
- 3.5 The practitioner decides to propose the use of a new in-house mortality table based on the firm's own experience. This is a change from the past approach of using industry mortality tables.
- 3.6 The judgements exercised include that the firm's own book of annuities is sufficiently large for developing a 'house-table', that the work carried out to develop the table is sufficiently reliable and that the new table will lead to a more representative result overall.

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- 3.7 This is deemed to be a highly material combined judgement. Therefore, P2.2 to P2.4 and the associated Application Statement would need to be complied with in full (as would the related Documentation and Communication requirements). The practitioner decides that the documentation of the supporting justification will need to be in the form of a detailed paper which is then summarised in communications to the intended user.
- 3.8 In this case, communications should provide sufficient information to allow the intended users and any additional anticipated users of the actuarial information to understand the materiality of the combined judgement exercised relative to the alternative reasonable judgement of retaining the existing approach of using industry tables. The practitioner may in this case have at least two intended users: a senior manager and the Board. The communications to the senior manager would likely include more technical information than the communication to the Board. In addition, the practitioner might want to ensure that the language within the report is suitable for the Regulator, as a potential user, who would likely have an interest in understanding the implications of the judgements on the solvency position of the insurer's portfolio.

Scenario 3: Material Judgement – pensions

- 3.9 A pension scheme has effected a buy-in of some of its pensioner liabilities by purchasing from an insurer a bulk annuity policy relating to the pensions of a proportion of its pensioners and their dependants. Before entering into the transaction, the trustees took advice which explained the benefits of the buy-in but also identified some risks. These risks include a reduction in investment flexibility, as the policy cannot be surrendered, and an increased exposure to counterparty credit, as a significant part of the scheme's assets are held with a single entity.
- 3.10 The Scheme Actuary is carrying out the scheme's triennial valuation and intends to value the bulk annuity policy as equal to the value of the insured liabilities.
- 3.11 The Scheme Actuary considers whether there is a need to adjust the valuation for the risks associated with the policy and begins by thinking about the needs of the intended user of the work, i.e., the trustees. The Scheme Actuary is aware that the trustees will need to place a high degree of reliance on the actuarial valuation results when reaching a funding agreement with the employer.
- 3.12 The Scheme Actuary is familiar with the trustees' overall investment strategy and is confident that the trustees have understood, and have taken into account, the expected reduction in volatility of the scheme's funding level as a result of holding the bulk annuity policy. The Scheme Actuary is also confident that the trustees have understood and have taken into account issues around the mitigation of interest rate, inflation and longevity risks relating to the insured benefits.
- 3.13 The Scheme Actuary also knows that the insurer's risk management controls together with the protections that are available from the Financial Services Compensation Scheme for buy-ins of bulk annuities from insurance companies are expected to provide strong mitigation against the identified counterparty risk.

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- 3.14 Given this, the Scheme Actuary decides that it is not necessary to reflect the risks associated with either the loss in investment flexibility or increased counterparty credit exposure from the buy-in of the bulk annuity policy within the triennial valuation, as there is strong supporting evidence, that these risks net of mitigation are not expected to be significant for the triennial valuation. As a result, these risks are unlikely to impair the trustees' ability to rely on the results of the valuation for the purpose of negotiating a funding agreement with the employer. Given this, the Scheme Actuary does not progress to consider these risks any further.
- 3.15 The Scheme Actuary is cognisant of the need to ensure the rationale for the material judgements exercised is documented to uphold the quality standards they set themselves for the work. The Scheme Actuary is also aware of the need to meet TAS 100 requirements, and with reference to these standards wants to avoid distracting the trustees from information that could obscure the material actuarial information being presented and their more important considerations. The Scheme Actuary decides to state that the risks associated with the loss in investment flexibility or increased counterparty credit exposure from the buy-in of the bulk annuity policy have been excluded on grounds of materiality as the risk impacts are not expected to be significant, net of mitigations for the triennial valuation. The communication of this fact is brief and the Scheme Actuary does not envisage this will be challenged by the trustees. However, the Scheme Actuary does include over-arching commentary in the report on the risks that have been retained within the Scheme (e.g., operational and reputational risks).

Scenario 4: Materiality and Proportionality - pensions

- 3.16 Following a recent acquisition, 30 employees have been admitted to a large pension scheme on special benefits and their circumstances are not fully reflected within the existing valuation methodologies, so the practitioner needs to advise on what methodology should apply to these cases. The members concerned are not paid significantly above the average for the sponsoring firm.
- 3.17 The practitioner first needs to consider the context; will the methodology be used for assessing the value of individual members' benefits for a specific purpose or for the triennial valuation of the pension scheme as a whole or for both.
- 3.18 In the case of a methodology for use in assessing the value of individual members' benefits, the advice is 'technical actuarial work' falling within TAS 100. Where the associated decision of the intended users (the Trustees) could have a non-negligible effect on the individual beneficiaries affected, e.g., in deciding on the appropriate amount to pay as a Cash Equivalent Transfer Value, it is unlikely to be reasonable for the practitioner to conclude that their advice could not influence the Trustees as to the methodology to apply. Consequently, the practitioner's communications will need to reflect this by including sufficient relevant information to allow the Trustees to make informed decisions.
- 3.19 In the case of a methodology for use in the triennial valuation of the pension scheme, the advice is 'technical actuarial work' falling within TAS 100. However, it is likely to be immaterial to the intended users and so the principle of proportionality might appropriately be applied to keep the extent of the advice (or even the choice of methodology) within the

level of benefit that the intended user might expect to derive from that work. In particular, for communications because their financial significance for the pension scheme and its sponsoring employer is negligible, a proportionate approach under TAS 100 may justify no details being communicated (in relation to these members' special benefits) under several of the TAS provisions.

Scenario 5: Materiality and Proportionality – life insurance

- 3.20 A With-Profits Actuary is recommending revised final bonus rates to the Board. The firm has numerous funds, and each fund has multiple bonus series, many of which have different underlying asset mixes. Each bonus series contains multiple bonus rates for different policy terms and types. Consequently, the With-Profits Actuary is recommending changes to many thousands of different bonus rates. Whilst many of these bonus rate changes will not be financially material to the firm, they could be material to individual policyholders. However, there are no sharp changes in approach and no exceptional changes in particular bonus rates.
- 3.21 In this case, the advice is 'technical actuarial work' falling within TAS 100, and the associated decision of the intended users (the Board) could have a non-negligible effect on the individual beneficiaries or policyholders affected. It is therefore unlikely to be reasonable for the With-Profits Actuary to conclude that the advice could not influence the Board as to the bonus rates to apply. Consequently, the With-Profits Actuary's communications will need to reflect this by including sufficient relevant information to allow the Board to make informed decisions.
- 3.22 Although there are no material changes to bonus rates in aggregate terms, the With-Profits Actuary is conscious of the need to provide the Board summary information on the changes to bonus rates by fund and series in recognition of the need to satisfy wider UK regulatory requirements, for example around the need to treat customers fairly, alongside requirements to meet TAS 100 standards.
- 3.23 Given the large range of bonus rate changes, the With-Profits Actuary applies the principle of proportionality to inform the reporting to the Board and sizes the bonus rate recommendations into broad tranches with accompanying summary details of the constituent funds and series underlying each tranche and their portfolio weightings. The With-Profits Actuary provides fuller justifications for the recommendations where the bonus rate changes are greatest. The With-Profits Actuary believes this form of communication will ensure that the Board is sighted on the less material funds and series, which is important per their wider regulatory obligations and also meets TAS 100 requirements for clear, comprehensive and comprehensible communications that are not obscured by immaterial information.

Scenario 6: Materiality and Proportionality – general insurance

- 3.24 A practitioner is performing a best-estimate valuation of a portfolio of motor insurance policies as part of the quarterly reserving exercise for an insurance company. The intended users of the work are the CFO and the company's Reserving Committee.
- 3.25 The motor insurance portfolio consists of three lines of business: Private Car, which represents about 70% of the company's total reserves; Commercial Vehicle, which represents about 25% of the total reserves; and, Motorcycle, which represents the remaining 5% of the company's total reserves and is currently in run-off.
- 3.26 The practitioner considers the work needed allowing for materiality and proportionality to review and update the valuation assumptions per line of business to ensure the work satisfies TAS 100 requirements. The practitioner considers:
- The significance of the company's overall exposure to Motor Insurance business, which is material.
 - The significance of the company's exposure to each individual line of business. Based on the relative size of each line to the total Motor Insurance exposure, Motorcycle is much less material than the other two lines.
 - The nature and complexity of the claims that could arise from each line of business in the Motor portfolio. All lines of business are similarly impacted by property damage, liability, and bodily-injury claims.
 - The overall availability and quality of claims data in aggregate terms for each line. Much more historical claims data is available for Private Car than the other lines and the claims data is also more credible.
 - The availability and quality of claims data for the different broad categories of claims. For the shorter-tail property damage liabilities, the practitioner feels comfortable with the amount of historic claims data that is available within each of the three lines as the claims take less time to develop and the claims data that is available is sufficient for the analysis. However, for longer-tail third-party damage and third-party bodily injury liabilities, the lack of historic claims data for Commercial Vehicle and Motorcycle is more of an issue as claims take longer to develop. As a result, the practitioner decides to use Private Car longer-tail data to set the long-tail assumptions for third-party damage and third-party bodily injury liabilities for both the Commercial Vehicle and Motorcycle lines. The practitioner notes the justifications and limitations of this approach in the report to the CFO and the Reserving Committee, highlighting why Private Car longer-tail claims data is less representative of the other lines.
 - The extent of statistical modelling rigour that is needed. The practitioner applies more statistical rigour into Private Car modelling as this will have the most impact on the valuation result. Given the small relative size of the Motorcycle line and the fact this business is in run-off, the practitioner feels comfortable updating the previous modelling exercise, rather than building a new model.

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- 3.27 Due to the lack of data, the practitioner feels there is greater uncertainty in the results for the Commercial Vehicle and Motorcycle lines but is most concerned by Commercial Vehicle as it is more material than Motorcycle. The practitioner consequently performs additional sensitivity testing for Commercial Vehicle and highlights in the report to the CFO and the Reserving Committee why this approach was taken.
- 3.28 In summary, the practitioner has valued all the Motor Insurance business but has applied proportionality to guide the valuation approach by line. The practitioner describes the material judgements exercised and the use of proportionality in the report.

Scenario 7: Materiality and Proportionality – life insurance

- 3.29 A practitioner within a UK life insurance company is working on a Merger & Acquisition (M&A) project to acquire another UK life insurance company, alongside other practitioners in a dedicated team assigned to the project. The project is a multi-disciplinary team effort that includes experts from Actuarial, Accounting, Human Resources, Tax, Legal, IT, Communications, Risk and Compliance teams. The practitioner's role is to value the assets and liabilities of the target company.
- 3.30 The practitioner, alongside the other practitioners in the project team, will need to be aware of the responsibilities of the other cross functional experts involved in the M&A project and the extent to which the practitioners in the actuarial team will be required to engage with these experts. For example:
- The accounting team will be forming a view on the target company's financial reporting, including the valuation of its assets (information that the practitioner's team will be relying upon). If the acquisition goes ahead, the accounting team will be responsible for preparation of financial statements for the transaction and for post-acquisition accounting and reporting.
 - The tax team will analyse the tax implications of the transaction and will try to identify ways to minimise the tax burden associated with the acquisition.
 - The legal team will review all legal documents, negotiate terms and conditions, and draft legal agreements.
 - The risk team will analyse all risks involved in the transaction and identify ways to mitigate the risks.
 - The compliance team will be responsible for ensuring that all relevant UK legislative and regulatory requirements associated with the transaction are addressed.
- 3.31 The practitioner, alongside the other practitioners in the project team, will need to comply with TAS 100 requirements and other relevant UK legislative and regulatory requirements for the part(s) of the work for which they are responsible.

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- 3.32 The practitioner is asked to deliver the results of their work in a standardised format (a 'work package'). The practitioner checks that the work package template can accommodate the actuarial information required to meet the reliability objective as well as TAS 100 requirements relating to the documentation and communication principles.
- 3.33 In completing the work package, the practitioner is mindful of the following:
- Although the ultimate intended user of the work package is the Board, there will be a range of project stakeholders with an interest in the actuarial information and some of these stakeholders may be unfamiliar with actuarial terminology. The content of the work package will need to reflect this.
 - These other project stakeholders might reasonably be expected to make use of the practitioner's work package in their work. Given this, the practitioner will need to anticipate who those users would be, engage with them and adapt the output to have regard to the expectations of these users (e.g., those from the legal and risk functions).
 - The practitioner is also mindful that the output from the work package might be selectively referred to or used in other reports produced by other stakeholders. The practitioner endeavours to double-check how the output will be used and by whom to ensure any representations within wider stakeholder communications are appropriate and correct.
- 3.34 The practitioner and the team members decide to apply proportionality to ensure that the valuation work and extent of corresponding judgements are focussed and appropriate. The practitioner starts by considering the most material asset categories and lines of business of the target company. However, the practitioner is cognisant that issues could subsequently emerge that would impact the valuation of the less material asset categories and lines of business if these areas are not given adequate attention in the current work. To mitigate this risk, the practitioner requests additional confirmations on key items from colleagues in the other project teams and also seeks confirmations within regulatory correspondence, such as the ORSA (Own Risk & Solvency Assessment) report filed by the target company.
- 3.35 In performing the work, the practitioner and the team members ensure the technical actuarial work they perform for their valuation clearly identifies all material issues and uncertainties relating to data and assumptions and that their corresponding valuation judgements have regard to these issues and uncertainties. In particular, they note that they have placed reliance on the policy data, asset data and valuation results provided by the target company, much of which is in summarised form. They also focus on any material options and guarantees identified as part of the review of the documentation provided by the target company.

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- 3.36 The practitioner decides to include the following in the team's work package:
- Information on the materiality of judgements exercised.
 - Details of any known material changes and material events that have occurred since the date of the data related to their work.
 - The sensitivity of the results to both individual material judgements and combinations of material judgements.
- 3.37 The work package is written in a style that the practitioner believes would be clear and comprehensive to stakeholders who may be unfamiliar with actuarial terminology. They have given focus to how best to apply proportionality to ensure the detail presented would suffice for these stakeholders to avoid distracting them from information that could obscure their more important considerations.
- 3.38 To prepare documentation on judgements made, the practitioner also decides to prepare a record of the judgements exercised to complement the work package. The practitioner believes this approach to be appropriate and proportionate given the significance of the decisions that are likely to be taken based on the work package. In a similar way to the work package, the record is written assuming it will be used by stakeholders unfamiliar with actuarial terminology.

Scenario 8: Materiality and Proportionality – pensions

- 3.39 A pension scheme is due for its triennial actuarial valuation. The Trustees' Covenant Advisor has identified some new commercial risks to the business of the sponsoring employer and has advised the trustees that the employer covenant has weakened significantly since the date of the last actuarial valuation. Having been informed of this by the trustees, the Scheme Actuary informed them that covenant strength is an important factor to take into account when setting the level of prudence to incorporate into the assumptions used for the actuarial valuation.
- 3.40 A few days later, the Trustees explain to the Scheme Actuary that they intend to seek mitigation from the employer for the additional risk to the pension scheme, and that they have had initial discussions with the employer about this. They indicate that it has become clear from these discussions that, because the valuation basis will reflect the strength of the covenant, negotiations with the employer over mitigation cannot be separated from discussions over the actuarial valuation. The Trustees have concluded that any mitigation will have to be agreed as part of the overall funding agreement reached at the actuarial valuation.
- 3.41 The Scheme Actuary decides that, if the new covenant risk were to be fully mitigated, then there would be no reason to change the degree of prudence in the funding basis from that adopted for the previous valuation. However, without full mitigation, the funding basis should be more prudent. Following discussions with the Covenant Advisor and the Trustees about the nature and extent of the covenant impact, the Scheme Actuary advises the Trustees on the appropriate level of the additional prudence that is needed in the case of no mitigation, and its estimated impact on the valuation results. The Trustees feel that

negotiations with the employer will not be easy, which underlines the fact that the impact on the funding basis will be material.

- 3.42 The judgement which the Scheme Actuary has exercised over the quantification of the impact of the covenant detriment is material, and this is reinforced by the Trustees' reaction. Furthermore, the matter is complex, with many potential solutions, and the Trustees will need to be able to place a high degree of reliance on the actuarial information, as well as the additional covenant advice, which they will receive when negotiating an agreement on funding and covenant mitigation. The Scheme Actuary will need to ensure a proportionate approach is applied to meet TAS 100 requirements relating to judgement, and the related requirements for documentation and communications.
- 3.43 With proportionality in mind, the Scheme Actuary decides to prepare a comprehensive paper to the Trustees to explain the matters that have been considered, the judgements that have been made and the implications for the funding of the scheme. Since the covenant advice is critical to the Scheme Actuary's judgement and the decisions the Trustees will take, the Scheme Actuary provides detailed explanation in the paper of how judgements exercised have been informed by the commercial risks identified by the Covenant Advisor.
- 3.44 The Scheme Actuary also considers the merits of co-writing a joint paper with the Covenant Advisor to the Trustees, to collate all the matters to be considered by the Trustees to inform their decision-making. The Scheme Actuary resolves to discuss with the trustees and the Covenant Advisor whether this would be possible. If the parties agree to a joint paper, the paper will make it clear which parts of the contents the Scheme Actuary is responsible for and, accordingly, will ensure that those sections are compliant with the communications requirements of TAS 100.

Scenario 9: Materiality and Proportionality – general insurance

- 3.45 A practitioner works for a general insurance company with a large personal lines property portfolio that has been impacted by an escape of water event early in the month. The CFO has asked the practitioner to come up with a very quick estimate of what the potential range of claims outcomes might be for onwards communication to the CEO and the Executive Team. The CFO acknowledges the fact that as the event has recently occurred, it will be too early for the practitioner to model it with any precision.
- 3.46 The practitioner has limited claims data available from the event, which is not sufficient for construction of a credible development pattern for the modelling. However, the practitioner does have development patterns from prior events that could be used as a proxy for estimates until the development pattern for the current event is substantially developed. The practitioner also has details of the reinsurance recoveries from the Company's reinsurer, from prior escape of water events. With this information, the practitioner is confident that a range of estimates for the Company's potential claims exposure on both a gross of reinsurance and net of reinsurance basis can be calculated. The practitioner is aware that the calculations are uncertain as the current event might not develop in the same way as prior events and correspondingly, that the level of uncertainty in the estimates is significant. This will be clearly stated in the practitioner's subsequent communications to the CFO.

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- 3.47 The practitioner decides to apply a standard frequency/severity model to daily claims data using the limited claims data available, using the full range of development patterns from previous events. The practitioner notes that the assumptions around the average cost per claim vary considerably across the different escape of water events, and the ultimate loss the Company will face to the current escape of water event will be very sensitive to this assumption. In performing the work, the practitioner applies proportionality in different ways: firstly, through the direct use of previous development patterns without any ranking for appropriateness or adjustment, as it is too early for the practitioner to form a view as to how current claims development will differ from the past; secondly, through the use of a simple approach to estimate the impact of the outwards reinsurance protection.
- 3.48 The practitioner communicates the modelling approach and assumptions to the CFO, highlighting how proportionality has been applied and the specific areas of reliance and uncertainty. The practitioner makes it clear that it could take several months before more reliable estimates are available and the uncertainty of the assumptions is sufficiently reduced, as this depends on the pace of claims development from the current event. The practitioner agrees to continue to refine the estimates and modelling on a regular basis and will provide these updates to the CFO and to colleagues responsible for the monthly reserving process.

Scenario 10: Proportionality – collective money purchase pensions (credible alternative model methodology)

- 3.49 The Scheme Actuary to a collective money purchase pension scheme is preparing advice to the scheme's trustees in relation to their preparing a viability report. This viability report is to be submitted to the Pensions Regulator to seek authorisation of the scheme. To provide this advice, the Scheme Actuary is developing a stochastic model to project future benefit adjustments given the intended investment strategy for the scheme.
- 3.50 The Scheme Actuary understands that a key decision in developing the stochastic model is the distribution of equity returns around a central estimate assumption. The Scheme Actuary has consulted with the scheme's investment advisors and selected an appropriate methodology to project equity returns around the central estimate.
- 3.51 The Scheme Actuary is aware that there are credible alternative methodologies that could have been selected where extreme negative equity returns are more likely. They believe that the result of the modelling could be materially different should such a credible alternative methodology be used. The Scheme Actuary is considering the application of TAS 310 provision P3.6 in communicating alternative modelling methodologies to allow the trustees to make an informed decision as to whether the scheme is sound.
- 3.52 The Scheme Actuary estimates that there would be a significant expense to build an alternative model using a different methodology. They therefore do not consider that building, testing and running another model would be a proportionate approach to communicating possible alternatives to the trustees.

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- 3.53 The Scheme Actuary instead decides to explain in their communications related to the modelling, in appropriate language and without quantifying the impact of using alternative modelling:
- The rationale for the methodology chosen for projecting the distribution of equity returns.
 - What a credible alternative approach would be, and circumstances in which the alternative may be considered appropriate.
 - A directional view, based on approximate methods, on how the results of the modelling may change under the alternative modelling methodology considered. For example the expected impact on the modelled median level and the degree of uncertainty of benefit adjustments.
- 3.54 The trustees discuss the advice provided by the Scheme Actuary. Based on this, they decide that the modelling provided is sufficient for their purposes and that they do not require more detailed results to be calculated on the alternative modelling methodology.

Scenario 11: Proportionality – collective money purchase pensions (credible alternative assumptions)

- 3.55 A Scheme Actuary is carrying out an annual valuation of a collective money purchase pension scheme for the trustees of the scheme. The output of the valuation will determine the level of benefit adjustments to be applied for that year. The Scheme Actuary is providing advice to the trustees on the central estimate assumptions to be adopted in the valuation.
- 3.56 In preparing this advice the Scheme Actuary applies judgement in two key areas:
- After receiving input from the investment managers and internal investment experts at their firm, the Scheme Actuary is proposing that the expected return on equities (which feeds into the discount rate) should be based on historic returns, less an adjustment to allow for the difference in forward looking return expectations. The Scheme Actuary has also decided that in their view, there are two reasonable alternative approaches to setting this adjustment which would result in slightly higher or lower discount rate assumptions compared to the central estimate assumption the Scheme Actuary intends to recommend, and which could materially affect the results.
 - When deriving the assumption for future improvements in mortality, after receiving input from internal mortality experts at their firm, the Scheme Actuary decides on a rate for future improvements which they consider reasonable to recommend to the trustees. The Scheme Actuary and mortality expert discuss a number of parameters which feature in modelling future improvements in mortality which could impact results. The Scheme Actuary applies their judgement to conclude that the most material of these is the assumed long-term rate of improvement, noting that a higher rate, which would result in higher liabilities, could also be considered reasonable. The Scheme Actuary believes that given the scheme's demographic profile, this could have a material effect on the level of benefit adjustments determined by the valuation results.

3.57 The Scheme Actuary's advice includes the following:

- The rationale for their recommended central estimate for each assumption and the key areas where actuarial judgement has been applied.
- The potential alternative assumptions for the discount rate and future improvements in mortality, an explanation of why they believe they are credible alternatives and what the benefit adjustment would be under these credible alternatives in line with provision P.6.1 of TAS 310.
- Why they have chosen their recommended central estimate rather than the credible alternatives.
- Comments on how the proposed discount rate and mortality assumptions differ from those used in the previous actuarial valuation in line with application A7.5 in TAS 100.

3.58 The Scheme Actuary also describes the additional risks that may arise from adopting one of the credible alternatives, including how this may impact benefit adjustments in future years.

3.59 The Scheme Actuary discusses their recommendations with the trustees in their next meeting and uses this opportunity to confirm with the trustees that they understand why the Scheme Actuary believes the proposed discount rate and mortality assumptions are appropriate central estimates rather than the credible alternatives presented.

Scenario 12: Proportionality – general insurance (Communication and Documentation)

3.60 A pricing actuary works for a managing agent at Lloyd's of London and has been asked by the Chief Underwriter for a particular line of business to provide the expected claims cost for a bespoke risk. The underwriter has made it clear that a quick response is needed as it will feed into a commercial negotiation the following day.

3.61 The bespoke risk shares some characteristics with existing risks but not enough that the actuary can simply use the existing data without adjustment.

3.62 The actuary adjusts the historical data by deciding on granularity, excluding data where appropriate and applies a number of deterministic models to estimate the expected claims cost for the bespoke risk in question. The outputs are considered in the context of the managing agent's business plan and overall capacity.

3.63 An agreed internal communications template exists which the actuary judges to be appropriate for this piece of work. It has been designed to be a proportionate and efficient way of ensuring the work is communicated appropriately, whilst also meeting the relevant TAS requirements. The sections within the template are described below:

3.64 The overall conclusion section is not pre-populated with any information, and the actuary provides an overall summary of the key conclusions. The actuary includes any key limitations, uncertainties, or recommendations for additional modelling work within this section.

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- 3.65 The risk identification section is pre-populated with several common factors that have the potential to have an impact on the work, with the ability to add more if needed. The actuary selects those that apply and are material, and writes a brief explanation of how the factor has been allowed for within the work.
- 3.66 The judgement section is not pre-populated with any information, and the actuary provides details of the material judgements.
- 3.67 The data section is pre-populated with the common sources and types of data, various adjustments that can be made, and common types of data checks and controls, and the actuary selects the relevant options and adds further detail as needed.
- 3.68 The assumptions section is pre-populated with the common assumption types for the models in use within the company. For each relevant assumption type, the actuary provides a justification for why it is appropriate.
- 3.69 The models section is pre-populated with common model types. The actuary selects the relevant model types, methodologies, intended use, and key limitations.
- 3.70 An agreed internal documentation template also exists which the actuary judges to be appropriate for this piece of work. It has been designed to be a proportionate and efficient way of ensuring the work is documented appropriately, whilst also meeting the relevant TAS requirements, as well as being appropriate for peer review purposes.
- 3.71 This template has sections on risk identification, judgement, data, assumptions, models, and peer-review. Each section is pre-populated with the information from the communication template, including the information added by the actuary, and the actuary adds further detail that is suitable for the documentation template, including comments on model governance. This is to ensure all the necessary information for any peer-review is contained within the documentation, and that the documentation is useful for future reference.
- 3.72 Following the peer-review, the actuary makes some small changes and then sends the completed communication template to the Chief Underwriter.
- 3.73 The actuary is satisfied that the work has been communicated and documented appropriately and in a timely manner, and that it is compliant with TAS 100, TAS 200, and APS X2.



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