

Agenda paper 3: Risk adjustments and skewed distributions

This paper has been prepared for discussion purposes only.^{1 2}

Objectives of this agenda item

1. Consider the accounting response under AASB 17 when the expected value of fulfilment cash flows (excluding a risk adjustment) exceeds the level of confidence for the entity's liability for incurred claims.³
2. In this context, the Group is asked two questions:
 - could a risk adjustment for insurance contracts issued be negative?
 - what disclosure would you expect an entity with a zero risk adjustment to make when it has a skewed distribution?

Expected values and confidence levels

3. Estimates of future cash flows used to measure insurance liabilities are 'expected values' based on IFRS 17.33 (emphasis added):

33 ... The estimates of future cash flows shall:

- (a) incorporate, in an unbiased way, all reasonable and supportable information available without undue cost or effort about the amount, timing and uncertainty of those future cash flows (see paragraphs B37–B41). **To do this, an entity shall estimate the expected value (ie the probability-weighted mean) of the full range of possible outcomes.**

4. The AASB 17 the definition of 'fulfilment cash flows' also refers to 'expected value'.

An explicit, unbiased and probability-weighted estimate (ie **expected value**) of the present value of the future cash outflows minus the present value of the future cash inflows that will arise as the entity fulfils insurance contracts, including a risk

5. AASB 17.37 requires a risk adjustment.

37 An entity shall adjust the estimate of the present value of the future cash flows to reflect the compensation that the entity requires for bearing the uncertainty about the amount and timing of the cash flows that arises from non-financial risk.

However, the Basis for Conclusions to AASB 2022-9 (see Appendix 1) notes that public sector entities may not seek to be compensated for risk and not include risk adjustments.

6. AASB 17 does not prescribe a technique to calculate the risk adjustment, however, it requires disclosure of the confidence level achieved [AASB 17.119].

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2 This paper references AASB 17 *Insurance Contracts* and AASB 2022-9 *Amendments to Australian Accounting Standards – Insurance Contracts in the Public Sector*, but is intended to apply equally in the context of the New Zealand XRB's PBE IFRS 17 *Insurance Contracts* and XRB's *Insurance Contracts in the Public Sector (Amendments to PBE IFRS 17)*.

3 Please note: the discussion is in the context of liabilities for incurred claims and not liabilities for remaining coverage because public sector entities are expected to apply the premium allocation approach, which does not have an explicit risk adjustment.

7. The **IFRS 17** Basis for Conclusions acknowledges that the confidence level disclosure has its limitations and notes the following (emphasis added):

BC216 The Board acknowledges concerns that disclosure of the confidence level would be burdensome to prepare and may not provide information that is directly comparable. However, the Board did not identify any other approaches that would provide quantitative disclosure that would allow users of financial statements to compare the risk adjustments for non-financial risk using a consistent methodology across entities. In particular, the Board noted that this objective would not be achieved by:

- (a) disclosing the range of values of key inputs used to measure the risk adjustment for non-financial risk from a market participant’s perspective; or
- (b) providing information about the relative magnitude of the risk adjustment for non-financial risk compared to total insurance contract liabilities.

BC217 The Board also considered whether a different technique, such as the cost of capital approach, should be used as the basis for comparison. Although **the usefulness of the confidence level technique diminishes when the probability distribution is not statistically normal, which is often the case for insurance contracts**, the cost of capital approach would be more complicated to calculate than would the confidence level disclosure. Also, the confidence level technique has the benefit of being relatively easy to communicate to users of financial statements and relatively easy to understand. ...

8. Confidence levels are conventionally determined as a percentile along the distribution and the following examples help illustrate the impact of different distributions.

- In a normal distribution, the mean (central estimate) and the median (50% confidence level) are the same, and the distribution is symmetrical.
- In a skewed distribution, the mean and the median can be different, and the distribution is not symmetrical. Skewed distributions have a longer tail on one side, indicating that extreme values are more likely to occur in one direction.

9. The following examples help illustrate the impact of different types of distributions.

| | 15 Data observations | | Central estimate | | Confidence level | |
|----|----------------------|---------|------------------|---------|------------------|---------------|
| | Skewed | Normal | Skewed | Normal | Skewed | Normal |
| 1 | \$500 | \$500 | | | | |
| 2 | \$600 | \$700 | | | | |
| 3 | \$750 | \$900 | | | | |
| 4 | \$850 | \$1,100 | | | | |
| 5 | \$1,000 | \$1,300 | | | | |
| 6 | \$1,100 | \$1,650 | | | | |
| 7 | \$1,250 | \$1,900 | | | | |
| 8 | \$1,350 | \$2,150 | \$2,150 | \$2,150 | 50% = \$1,350 | 50% = \$2,150 |
| 9 | \$1,500 | \$2,400 | | | 60% = \$1,500 | 60% = \$2,400 |
| 10 | \$1,600 | \$2,650 | | | | |
| 11 | \$1,750 | \$2,900 | | | | |
| 12 | \$2,000 | \$3,150 | | | 75% = \$1,875 | 75% = \$3,025 |
| 13 | \$3,000 | \$3,400 | | | | |
| 14 | \$5,000 | \$3,650 | | | 90% = \$4,000 | 90% = \$3,525 |
| 15 | \$10,000 | \$3,900 | | | | |

10. In the above skewed distribution, the expected value of an insurance liability has a confidence level that exceeds the 75% confidence level.

Commercial private sector insurer context

11. APRA's Prudential Standard GPS 340 *Insurance Liability Valuation* acknowledges the possible impact of skewed distributions and addresses the issue of skewness by requiring two criteria to be met in determining minimum risk margins:
- 23 Risk margins must be determined, for each class of business and in total, on a basis that reflects the experience of the insurer. In any event, the risk margins must be valued so that the insurance liabilities of the insurer, after any diversification benefit, are not less than the greater of a value that is:
- (a) determined on a basis that is intended to value the insurance liabilities of the insurer at a 75 per cent level of sufficiency; and
 - (b) the central estimate plus one half of a standard deviation above the mean for the insurance liabilities of the insurer.
12. If the liability distribution was highly skewed, the mean of the distribution could be close to or even above the 75th percentile. A risk margin that was always set equal to the 75th percentile would be smaller (and potentially negative) for a highly skewed distribution. The GPS 340 requirement that the risk margin be no less than the central estimate plus one half the standard deviation ensures an appropriate risk margin for prudential purposes.⁴

Public sector context

13. Some public sector insurers are more likely than their private sector counterparts to have issues around skewed distributions and the potential for negative risk adjustments for the following reasons.
- (a) Relative to their private sector counterparts, many public sector insurers focus on one line of business and, therefore, do not have the diversification benefits that might lead to more normal distributions.
 - (b) In some cases public sector insurers exist because private sector insurers are unwilling or unable to provide insurance cover. This may be because the underlying insurance liabilities are highly skewed.
 - (c) A public sector entity may judge that it does not require a risk adjustment, which is contemplated under AASB 17 as modified by AASB 2022-9 *Amendments to Australian Accounting Standards – Insurance Contracts in the Public Sector* [refer to the Basis for Conclusions, paragraph BC151 – see Appendix 1]. Accordingly, any right-side skewness would stand out much more than for an entity with a need to be compensated for risk.
14. In respect of (b) and (c), it may be theoretically possible for a public sector entity to intentionally charge less than the expected value of the future cashflows. Such a situation may arise if the distribution has particularly large extreme outcomes, and government policy is that the public sector entity will bear that risk without charging for even the expected value of the extreme outcomes. Using the example above, if such a public sector entity judged [under

4 Refer: An Institute of Actuaries of Australia conference paper *Assessing & Monitoring Insurance Liability Uncertainty* Prepared by Elaine Collins, Laurel Kong, Stephen Robertson-Dunn and Felix Tang – Presented to the Institute of Actuaries of Australia XVth General Insurance Seminar 16-19 October 2005. This paper was written in the context of APRA's superseded Prudential Standard GPS 310 *Audit and Actuarial Reporting and Valuation* [Attachment A, paragraph 24].

AASB 17.37] that it required a risk adjustment that achieved an 90% confidence level, the total liability would be above the central estimate. If the entity judged that it required a risk adjustment to achieve a 75% (or lower) confidence level – because the entity would intentionally bear even the expected value of extreme outcomes without any compensation – they might in theory need a so-called 'negative risk adjustment'.

Question 1 – could a risk adjustment for insurance contracts issued be negative?

View A: Yes

15. In theory, a public sector insurer may intentionally subsidise a market by not charging for even the expected value of extreme outcomes. As a result, it may be satisfied with a confidence level for its liability for incurred claims that is *lower* than the expected value of a skewed distribution.
16. If the entity has a skewed distribution of claims data with the possibility of extreme outcomes for very large claim events, and despite this the entity concludes it is satisfied with a 50% confidence level for its liability for incurred claims it would be necessary to have a negative risk adjustment to bring the liability for incurred claims to a 50% confidence level.

View B: No

17. An entity cannot reduce the liability for incurred claims to below the expected value because to do so would be contrary to AASB 17.33, which implies that the liability for incurred claims includes at least the expected value.
18. It would be counterintuitive to have a negative risk adjustment because it would imply that the entity is risk-seeking. There is nothing in the text of AASB 17 or AASB 2022-9 that contemplates a negative risk adjustment.
19. Even though conceptually different, there is also nothing in the historical Australian and New Zealand practice in recognising 'risk margins' before adopting AASB 17, that would support a negative risk adjustment.

Do you support View A or View B and what is the basis for your view?

Disclosure of confidence levels

20. Assuming risk adjustments for insurance contracts issued cannot be negative (View B), any entity that determines an expected value under AASB 17.33 that achieves a confidence level above the confidence level that the entity would set in determining its risk adjustment under AASB 17.37 would measure the insurance liability at the expected value.
21. Entities in this situation would:
 - present in their disclosures reconciling the opening and closing balances of insurance liabilities [AASB 17.100 and 105] that the risk adjustment is zero; and
 - need to consider what, if anything, to disclose under AASB 17.119.
22. AASB 17.119 says:
 - 119 An entity shall disclose the confidence level used to determine the risk adjustment for non-financial risk. If the entity uses a technique other than the confidence level technique for determining the risk adjustment for non-financial risk, it shall disclose

the technique used and the confidence level corresponding to the results of that technique.

23. Using the above example of a skewed distribution, the following disclosures might be regarded as appropriate:
- (a) no disclosure is made under AASB 17.119; or
 - (b) the relevant confidence level for the central estimate of \$2,150 is just over 80% and would be disclosed under AASB 17.119; or
 - (c) the relevant confidence level for the expected value is just over 80% and would be disclosed under AASB 17.119, together with a narrative explaining the nature of the distribution and the relationship between the central estimate and confidence level.

Question 2 – what disclosure would you expect an entity with a zero risk adjustment to make when it has a skewed distribution?

View A: No disclosure?

24. A public sector entity that judges it does not require a risk adjustment has no need to disclose a confidence level, as it would be irrelevant. Therefore it need not make a disclosure under AASB 17.119.

View B: Confidence level for the expected value?

25. Given the significance of risk and information about risk adjustments for an insurer, it would be expected that some minimum disclosure is needed. An entity must include a risk adjustment under AASB 17.37, although the value of the adjustment can be nil. As a result AASB 17.119 would require disclosure of the confidence level that is consistent with a nil risk adjustment, that is, disclosure of the confidence level achieved by the expected value.
26. It would be of interest to users of the financial statements to know the confidence level achieved by the expected value.

View C: Confidence level for the expected value plus a narrative?

27. The reasoning noted above for View B also applies to View C.
28. In addition, it would be of interest to users of the financial statements to know the explanation of the nature of the distribution and the relationship between the central estimate and confidence level achieved by the expected value.

Do you support View A or View B or View C or another alternative and what is the basis for your view?

Appendix 1 – extracts from AASB 2022-9 Amendments to Australian Accounting Standards – Insurance Contracts in the Public Sector

29. The AASB 2022-9 Basis for Conclusions identifies factors that the AASB and NZASB considered might particularly impact on public sector entities with regard to risk adjustments:

BC151 In forming their conclusions, the Boards noted the following matters. ...

- (b) In the private sector, there would generally be expected to be some, at least broad, connection between the compensation charged for bearing risk ... However, that same perspective does not necessarily apply to public sector entities.
- (c) There may be public sector entities that have circumstances which would lead them to recognising and measuring their liabilities for remaining coverage and/or their liabilities for incurred claims and those insurance liabilities with a zero risk adjustment.
- (d) There may be public sector entities that have circumstances which would lead them to having a zero risk adjustment in recognising and measuring their liabilities for remaining coverage, but having a risk adjustment above zero in recognising and measuring their liabilities for incurred claims. The Boards observed that this situation might arise, for example, when claims are related to infrequent large-scale events and the uncertainties around the amounts and timing of cash flows from those events are particularly difficult to estimate.
- (e) Break-even pricing may be indicative of public sector entities that do not seek to be compensated for risk and do not include risk adjustments in recognising and measuring their liabilities for remaining coverage and/or their liabilities for incurred claims.