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Via email to: [christian.levac@actuaries.org](mailto:christian.levac@actuaries.org)

RE: *Risk Adjustments for Financial Reporting of Insurance Contracts under International Financial Reporting Standards No. X*

Dear Mr. Finnis:

On behalf of the Financial Reporting Committee of the American Academy of Actuaries,<sup>1</sup> I appreciate the opportunity to provide comments on the International Actuarial Association's (IAA) exposure draft of an educational monograph, *Risk Adjustments for Financial Reporting of Insurance Contracts under International Financial Reporting Standards No. X*.

Members of this committee are senior actuaries with extensive financial reporting experience in the practice areas of life, health, and property & casualty insurance. This letter includes a few general comments about the exposure draft; specific comments are incorporated in our responses to the individual chapters outlined in the exposure draft.

In general, we recommend the draft monograph be edited for consistency in style, voice, and structure among chapters. In addition, there is unnecessary repetition within chapters that could easily be eliminated. Specific examples are provided in our comments.

The draft monograph often assumes the reader is familiar with Solvency II requirements, which may not be a valid assumption. Solvency II requires the calculation of risk margins at a very granular level, but it is unnecessary for a company not subject to Solvency II requirements to be that granular in its approach to IFRS 17. Any IAA document should be useful for international users in general; we recommend it not be based on the assumption that users have adopted the same granular approach as Solvency II.

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<sup>1</sup> The American Academy of Actuaries is a 19,000-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policy makers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

Consistent with our concerns on the assumed underlying solvency framework, there are many instances of examples in the text from solvency/regulatory frameworks with the presumption that this practice could translate to what is acceptable practice under IFRS 17. Given the different measurement objectives among the multiple frameworks, we disagree with this approach. If these discussions and examples are to be retained in the text, it should be discussed how to potentially build that bridge between the various underlying measurement objectives for those frameworks to what is required by IFRS 17. For this monograph to be relevant to international practitioners of IFRS, it is essential that it be unbiased as to the underlying solvency or regulatory regime.

Throughout the document there are acronyms used repeatedly that are not defined. We suggest the final monograph include a glossary of acronyms.

Also throughout the document are references to wording or guidance included in IFRS 17. We understand that these would have been developed from the exposure drafts and various publicly available staff papers from the IASB noting changes to the second exposure draft as the board redeliberated. The references in the final monograph should not only be thoroughly checked against the final published version of IFRS 17, but the meaning and context of the references should also be checked against the text of the monograph.

## **Case Studies**

The cover note accompanying the exposure draft asked several questions about case studies. The text is unable to convey effectively the many calculations involved in applying certain methods of risk adjustment calculation. We recommend that the case studies be available in a working spreadsheet that would come with the final monograph (e.g., similar to the IAA's textbooks on stochastic modeling and discount rates).

The case studies cover the four quantitative risk adjustment techniques specifically described in the monograph. In our detailed comments below, we note additional techniques that could be illustrated for each case study. Overall, we believe that it would be beneficial to show an entity aggregate example rather than just a single product for general insurance companies. Also, an example that demonstrates the use of industry benchmarks for the amount and cost of capital would be beneficial to practitioners.

The authors expressed interest in receiving suggestions regarding how the variable fee approach could be applied to the basic participating life example included in the case studies. Because a profit participating feature is a type of product design intended to mitigate risk for the insurer, this case study could be used to illustrate the concepts discussed in Chapter 6. A useful illustration would be one that demonstrates the effect of risk mitigation on the risk adjustment. This could be achieved by starting with Case Study 10.2 and illustrating the impact of either reinsurance or a profit participating feature on the distribution of the liability values, then carrying the recalculation through to the risk adjustment for comparison to the risk adjustment for 10.2.

If you would like to discuss any of these further or if you have additional questions, please contact Nikhail Nigam, the Academy's risk management and financial reporting analyst, at 202-785-7851 or [Nigam@actuary.org](mailto:Nigam@actuary.org).

Sincerely,

Gareth Kennedy, MAAA, ACAS  
Chairperson, Financial Reporting Committee  
Risk Management and Financial Reporting Council  
American Academy of Actuaries

## **Chapter-Specific Comments**

### ***Chapter 1— Introduction***

Overall this chapter needs significant editing. Some paragraphs could be edited down and still convey the same message. Also, it is unclear in several areas as to the purpose of the content given the audience. Some of the concepts are too simple and should already be understood by all actuaries.

#### **Abstract**

- In the abstract to the chapter, the first and the third sections of the chapter are mentioned, but not the second.

#### **Section 1.1.1**

- The first paragraph claims a unique feature of insurance is receiving compensation upfront to assume the obligation of risk. This is not unique to insurance as it is true for other financial instruments (e.g., swaps).
- The third paragraph indicates that pooling of risks is a common goal in the insurance business. It is important to note that this is the pooling of largely independent risks. If all of your insureds are in the same flood plain, pooling will not help you achieve your intended outcome from using the law of large numbers. In that case, the diversification of risks is more important.
- The last paragraph should be a footnote.

#### **Section 1.1.2**

- The sixth paragraph implies that the expected value is always calculated. For non-life claim liabilities, this may not be true; it is more often a selection from the range of results of various methods.
- Given embedded value techniques are not a financial statement requirement, we suggest deleting this example.
- The phrase “appear to” in the second-from-last paragraph in this section indicates the author is not confident in the claim. We also note that latter part of this paragraph is not true for non-life liabilities. The non-discounting and lack-of-a-risk-margin rules were largely developed in an environment where the time value of money was not a material issue. As such, the decision to use a nominal estimate was for auditability and to allow for back-testing. The variability was handled via disclosure, not via a conservative estimate.

#### **Section 1.2.1**

- The last sentence in the second paragraph is not clear and should be rewritten. In addition to in-force contracts, the fulfillment value allows for profit or loss emergence for no longer in-force contracts that have economic performance beyond the expiration date. Under the model, risk margins also exist for claim liabilities on expired contracts.

- The last sentence in the sixth paragraph and the entire eighth paragraph are repetitive of prior content and should be deleted.

### **Section 1.2.2**

- The first sentence of the first paragraph does not take into account that risk adjustments are also required for claim liabilities.
- The third paragraph should recognize the need for independence of the risks in pooling. We suggest that making a statement that “similar risks” hereafter implicitly assumes that such risks are also largely independent.
- For the last sentence in the sixth paragraph, it may be worth adding to the end of the sentence “so long as the risks impact the portfolio similarly.” For instance, life and annuity contracts are usually issued to people of different age groupings—life contracts to younger groupings and annuities to older groupings. It’s possible for both groups to have unfavorable mortality; i.e., younger groups having increased mortality and older groups decreased mortality relative to what was expected. This addition to the sentence would make the example clearer.

### **Section 1.3.1**

- The fifth paragraph in this section may be best left for a discussion of the risk adjustment methods. We disagree with the statement that the “amount of capital also depends on the time horizon for which the capital amounts are estimated to be held.” For example, if a company has a capital basis of 10 percent of nominal outstanding liabilities, there is nothing that indicates a set time horizon in that statement.
- The sixth paragraph indicates the appropriate time horizon for the capital amounts is the lifetime of the fulfilment cash flows. We believe this should be clarified to indicate it is the lifetime of the uncertainty in the fulfillment cash flows.
- The last paragraph is repetitive and we suggest it be deleted.

### **Section 1.3.2**

- The last three paragraphs appear misplaced. These should be included where other types of risk margins are discussed.
- The last paragraph only mentions considerations in the valuation and is silent on the measurement objective. We think it would be useful to mention the measurement objective under AASB Standard 1023 to allow for comparison with that proposed under IFRS 17.

### **Possible Appendix**

- We suggest a mention of the historic Canadian approach.
- In previous statements, the draft monograph has noted that Solvency II is not relevant because it is a solvency requirement. We would recommend not mentioning it here.

## *Chapter 2—Principles Underlying Risk Adjustments*

### **Abstract**

- We suggest the first sentence of the second paragraph be rewritten for clarity.

### **Section 2.1.1**

- Other than the first and last paragraphs of this section, we recommend the rest of the content be deleted or heavily abbreviated.

### **Section 2.1.3**

- While the section title indicates this is about valuation principles, the content includes considerations for applying the principles. Also, it presumes incorrectly that the valuation must use a stochastic model to determine the risk adjustment. Cost-of-capital models don't have to use stochastic approaches, although we note IFRS 17 does require a Value at Risk (VaR) quantification of the resulting risk adjustment. Industry benchmarks could be used to determine the amount of capital (based on leverage ratios observed in the market and required for certain rating agency ratings). Also, use of observed market risk premiums for stocks (and Capital Asset Pricing Model calculations) could be used for determining cost of capital. These approaches are currently used to determine risk margins for purchase accounting valuations, and would be valid techniques under IFRS 17.
- In the seventh paragraph, the statement “there may be some implicit ‘bias’ in the selected best estimate” doesn't make sense based on the consideration noted. We suggest deleting this part of the sentence.
- The last sentence in the eighth paragraph is self-evident and we suggest deleting.
- The 10th and 11th paragraphs should be deleted. The concept of present value is well understood and doesn't warrant this level of discussion in a risk adjustment monograph. If it is not removed, we note that in the 10th paragraph the first three bullets only apply to the top-down approach noted in the 2013 IASB exposure draft. The wording implies it would always be applicable and should be clarified.
- The 13th paragraph, the first in the discussion of building block three, states that the Contractual Service Margin is part of this building block of the fulfillment cash flows. This is not consistent with the 2013 exposure draft that treated the CSM as separate and distinct from the fulfillment cash flows. This should be corrected unless the language is changed under the final IFRS 17.
- The 16th paragraph appears to be superseded to a large degree by the following paragraph. We suggest it be deleted or edited to coordinate the text with the subsequent paragraph.
- In the 17th paragraph, we believe that it is theoretically correct that the risk adjustment on a liability should always be positive, although we note that the 2013 exposure draft was silent on the issue.

- In the second-from-last paragraph, we think it is important to convey that diversification benefit has an impact on the risk adjustment and should result in non-additive risk margins. The current wording is somewhat unclear and we suggest it be edited for clarity.
- In the last paragraph, second-from-last sentence, we believe the word “usually” should be deleted.
- In the last paragraph, the last sentence indicates for reinsurance that risk adjustment is reported as an asset in the balance sheet. We are not aware of this from the 2013 exposure draft.

### **Section 2.2.1**

- It would be useful to discuss paradigm shifts and/or black swans under the model risk discussion.
- The example under the parameter risk discussion should be limited to discussing one parameter and not four.
- Under the discussion of mortality/longevity risk, it may be worth mentioning medical advances.

### **Section 2.2.2**

- The second sentence of the third paragraph was difficult to understand. We suggest it be rewritten.
- In the second-from-last paragraph there is no mention of reporting segment. This should be mentioned in the monograph in the context of any limitations it may pose on the calculation of the risk adjustment. Consider answering the following questions: Is an insurer limited in its level of aggregation to no higher than reporting segment? If not, how does it meet the reporting segment requirements?
- In the second-from-last paragraph, the last sentence unnecessarily repeats the measurement objective.

### **Section 2.2.3**

- The statement “For most financial reporting applications and specifically under IFRS 17, the risk-adjusted value of a liability will be greater than the expected value of the liability” is preferable over the language in a previous section that stated it would always be greater. There should be consistency though between the two sections.
- The evaluation of data attributes appear duplicative when they are already considered in the previous list of limitations. Why is this list needed over the previous list?
- The last sentence in the seventh paragraph has already been stated previously.

- The section on key elements that form the basis for risk adjustment seems to be more focused on risk management than the estimate required by IFRS 17. For example, we don't think many involved with IFRS work will spend much (if any) effort on evaluating the risk drivers for all the components of the claim liability. They also would not have time to monitor them all for possible changes in updating the risk adjustments. Consider deleting or significantly condensing this discussion.

### **Section 2.3**

- The discussion in the fourth paragraph might be useful to know but is not a requirement of IFRS 17, which requires an entity-specific measurement and not a market-consistent one.
- In the last paragraph, a comparison to solvency measurement approaches from the IAIS seems unnecessary.

### **Section 2.4**

- The parenthetical in the third paragraph could be moved to a footnote for better flow.
- There is significant duplicative material in the subsection "Replicating portfolio valuation under IFRS 17 Insurance Contracts for fulfilment cash flows." We suggest it be deleted.

### **Appendix**

- The term "best estimate" is not used in IFRS 17, hence this appendix is not relevant to the monograph.

## ***Chapter 3—Risk Adjustment Techniques***

### **Section 3.1.1**

- The last sentence of the second bullet in the first paragraph describes the risk adjustment as a distance, but it is not a distance. We suggest the sentence begin: "The amount of the Risk Adjustment is the difference between the probability..."
- In the fifth paragraph, we note that a confidence level is not a monetary amount. The sentence might instead be edited to state "For example, if, for a particular set of future uncertain cash flows, the amount required for a 90% confidence level is 100 currency units..."
- The paragraph immediately below the table implies that a risk measure can help diversify risk. We do not think that was intended and suggest that it be edited as appropriate.
- We recommend providing additional depth in Section 3.1.1. The example of two entities that require a different level of compensation (60 versus 100) to accept the same risk could be improved if additional information were provided as to

potential reasons why these differences could exist, with references to discussion of those reasons in other areas of the monograph.

- The depth of the discussion on the strengths and weaknesses of confidence level and conditional tail expectation approaches to risk adjustment is appropriate. The monograph could be improved with commentary on the manner in which real-world companies address the challenges discussed in the monograph in determining risk adjustments using quantile techniques (e.g., extreme events).
- The depth of the discussion on statistical coherence could be improved with a real-world example of how the sub-additivity issue could affect insurers (e.g., with risk margins derived on a line-by-line versus portfolio basis from industry data so that the readers gain a better understanding of how large a shortcoming the issue presents).
- In the second-from-last paragraph, the term “value at risk” is introduced with no preface. A definition or a brief discussion would be helpful.

### **Section 3.1.2**

- The depth of the discussion on the amount of capital required by the entity to support the insurance liabilities is generally nontechnical. Replicable portfolios are mentioned in the last bullet point on the list of “additional comments” on the cost-of-capital technique. This is a more technical issue as compared to the remainder of the discussion, and it would benefit from an example of its implications in a real-world or hypothetical scenario.
- The discussion on inflation as a potential source of mismatch between the cost-of-capital versus fulfillment-cash-flow assumptions would benefit from an example to illustrate the potential impact of the issue.
- In the eighth paragraph under the heading “Discussion of the use of the cost-of-capital technique” the clause “or when cash value or...” at the end of the sentence seems out of place and is not clear.
- The second and third paragraphs under the heading “Further discussion of the cost-of-capital technique” are unclear. Breaking these paragraphs up into smaller parts would help. It would also help to state at the outset whether there is a cost of capital that takes inflation into account or a cost of capital based on the premise that there will be no inflation.

### **Section 3.1.3**

- The discussion of the use of the Wang Transform to calibrate the risk adjustment could be improved with a simple numerical example, illustrating how the risk adjustment would move directionally with higher or lower profitability expectations.

### **Section 3.1.4**

- The descriptions of alternative methods to incorporate qualitative risk adjustments would benefit from a simple example or perhaps two examples, one representing a relatively well-behaved risk and a second representing a complex risk with significant tail exposure.
- This section addresses qualitative considerations associated with risk adjustments, which we believe is appropriate for the monograph.
- The first sentence in the fourth paragraph in this section should end after the second use of the word “distribution.” This is an example of a sentence continuing after its meaning has been conveyed.

## ***Chapter 4—Techniques and Considerations in Quantitative Modelling***

### **Overall Comments**

- This chapter focuses solely on stochastic and probability distribution approaches. Some cost-of-capital approaches are based on observations or rules of thumb for the amount of capital and the cost of capital, hence this chapter does not address all “current practices” around the world. That omission should probably be mentioned. This chapter doesn’t have to address it, but the paper should note the omission.
- Sections 4.1 and 4.2 provide a reasonable level of background describing modeling techniques and data requirements at a high level. In addition, the first part of Section 4.3 provides a helpful summary of key considerations when determining statistical distributions. However, the remainder of Section 4.3 through the rest of the chapter provides much more extensive detail around statistical distributions.
- The remainder of this chapter could be improved by providing simpler and more detailed practical examples of how a statistical distribution could be determined given sample data. Much of this chapter is written at a level that few practitioners would be able to readily follow, and those who could easily follow along would likely know this information already.
- In our experience, in developing statistical distributions established practice varies to a significant extent. For general insurance, it is common for an actuary to leverage software tools, assume a lognormal distribution or similar right-skewed distribution, and select key parameters from past history. Sometimes more complex modeling is performed. Accordingly, we suggest providing an example of a simpler form of modeling a statistical loss distribution, and then describe at a higher level more complex approaches and perhaps the circumstances in which these would be preferable.

### **Section 4.2**

- Item 2 in the beginning of Section 4.2 discusses the timing of an underlying event resulting in an insurance claim and fitting a distribution to that timing. For general insurance, it is typically thought of as the likelihood of an event as opposed to the timing of an event for a frequency distribution.

- This section uses the word “claim” with multiple meanings. Other words could be used to clarify the discussion for the reader. For example, when referencing the aggregate total amounts relating to claims in a given year, use “aggregate losses” rather than “annual insurance claim.”
- We believe for item 6 the “i.e.” should instead be “e.g.”

### **Section 4.3.1**

- In the paragraph following the chart “Probability Distribution of Insurance Liability,” both the first and last sentence appear to be missing words.

### **Section 4.3.2**

- The third paragraph starts with “For example,” but it is not clear what that is intending to reference.

### **Section 4.5.1**

- The first paragraph references the reader to Chapter 4 for approaches to derive probability distributions, but the reader is already in Chapter 4. Please be more specific as to the section in Chapter 4.

### **Section 4.5.1**

- The fifth paragraph references the acronym AAA. It is presumably referring to the American Academy of Actuaries. Acronyms are also used heavily throughout the document. A glossary of acronyms would be a useful addition to the document. Alternatively, the American Academy of Actuaries could be referred to as the “Academy.”

## ***Chapter 5—Qualitative Assessments and Other Factors to Consider***

### **Overall Comments**

- Chapter 5 covers a variety of topics, including high-level considerations around quantifying estimates with less-than-optimal data quality; considerations as to which risks drive uncertainty, diversification, aggregation, and disaggregation of risk adjustments; and other potential challenges that may be encountered in modeling. The monograph should include the qualitative factors to be considered when modeling risk adjustments as part of the process for determining statistical distributions.
- We believe the chapter is generally helpful. In particular, the examples provide helpful illustrations of an issue and/or a practical example. We do have a few overall recommendations:
  - A somewhat more complex example might be helpful, particularly for general insurance where there are three or four coverages that have different degrees of correlation.
  - The discussion in Section 5.4 was helpful, but the issue of the unit of account for the risk margin is so important that it should be mentioned earlier in the monograph.

- Certain cases, such as in Section 5.5, raise an issue with an example but do not resolve with recommended paths forward through the same example. The final version should have the illustration include both the presentation of the issue and a possible path forward to resolve the practical challenge raised, with a description of other potential paths forward to provide a solution.

### **Abstract**

- The second paragraph references the five principles set out under IFRS 17. If these principles are referenced elsewhere in the document, please refer the reader to that section. If not, then these principles should be at a minimum briefly discussed here.

### **Section 5.3.1**

- The third bullet in the subsection “Evaluating correlation among different sources of risk” indicates that more data points could be obtained by using quarterly data. It further recognizes that the correlations might be very different. It may be worth pointing out that sometimes quarterly points merely represent four copies of the same observation.

### **Section 5.3.3**

- The introductory sentence in this section is awkwardly worded and difficult to comprehend.

## ***Chapter 6—Effect of Risk Mitigation Techniques***

### **Overall Comments**

- This chapter focuses on the financial statement reporting of ceded reinsurance. Less attention is devoted to product design as a risk reduction technique. In general, we believe that concentrating on reinsurance transactions rather than product design is appropriate for the discussion on risk mitigation techniques relating to the risk adjustment for financial reporting.
- While product design is an important component of the overall risk taken on by an entity, it would generally already be reflected in the underlying experience. This is opposed to reinsurance, which results in an explicit financial reporting item to offset (mitigate) some of the risk taken on by the entity.
- It would be appropriate for the product design discussion to focus on changes in product design the practicing actuary should consider and that these changes could be both risk-mitigating and risk-increasing. Alternatively, if the intention of the monograph is that risk-reducing (or risk-increasing) product design elements would require additional reporting in the financial statements, then we believe this chapter should devote more attention to them.

### **Section 6.1.2**

- This section includes examples from life insurance but does not include any examples from general insurance. Some examples of general insurance product design that would impact insurer risk include:

- A large account is able to handle the variability in results for their workers' compensation, other liability, and auto liability exposures. However, for legal or regulatory reasons, the account needs an insurance policy written by a licensed insurance company. One solution offered by property-casualty insurers is a retrospectively rated policy, in which the account pays back the insurer for the account's losses. The risk to the insurer from these retrospectively rated contracts is less than with a guaranteed cost contract.
- A property-casualty insurance company contracts with a Managing General Agent (MGA) to market, underwrite, and administer a certain type of insurance. To protect the insurer against moral hazard, the commission paid to the MGA may vary with the profitability of the business produced by the MGA—with less-profitable business resulting in a lower commission. The contingent nature of the commission lowers the risk to the insurer.
- Certain product design elements might be risk-increasing. For example, writing a large-deductible workers' compensation policy arguably leaves the general insurance company with the riskier portion of the exposure. Similarly, writing an excess policy over a captive's self-insurance retention arguably leaves the general insurer with the riskier portion of the exposure.

#### **Section 6.4.2**

- We did not find the table helpful.

#### **Section 6.3.6**

- In the second paragraph, there is a sentence starting "Alternative approaches are needed, such as capital of capital..." Perhaps this phrase should read "Alternate approaches are needed, such as cost of capital..."

#### **Section 6.3.7**

- Toward the middle of page 93, the monograph states, "Alternatively, the risk mitigation from the reinsurance may be reflected in a lower cost-of-capital rate with reinsurance." We have not studied the remainder of this document closely enough to know whether this sentence is consistent with the rest of the document.

#### **Section 6.4.2**

- At the bottom of page 94, the footnote reads "...between the risk adjustment risk adjustment on a gross basis..." Perhaps this should read "... between the risk adjustment on a gross basis..."

#### **Section 6.5.1**

- This section is currently labelled 6.4.1.

### ***Chapter 7—Validation of Risk Adjustments***

#### **Overall Comments**

- We believe the focus on the cost-of-capital approach in this chapter is reasonable. While there are no prescribed methods, it is likely that a variation of the cost-of-capital approach will be used by many financial statement preparers. Further, most other approaches used will require validation of key assumptions that are integral to the cost-of-capital approach.

### **Section 7.4.3**

- The second paragraph states that risk adjustments by line of business from Solvency II can be used as a reasonability test. We disagree. It presumes that risk for a product line is independent of the jurisdiction or policy form. It also presumes the capital level for the one-year VaR approach under Solvency II is equivalent to the capital level required to fulfill the obligation. Finally, it also assumes the cost-of-capital assumption is equivalent between the two measurement bases. We suggest the removal of this paragraph.

## ***Chapter 8—Remeasurement of the Risk Adjustment***

### **Overall Comments**

- This chapter does not directly address techniques or approaches related to remeasurement. Instead, the chapter addresses the question of why there may be a need for remeasurement rather than a technical approach to it. We assume that the approaches for remeasurement would be similar or slightly modified from the original measurement approaches. We recommend that be explicitly stated.
- The chapter states in its abstract that it will cover the principles surrounding remeasurement and the components of the risk adjustment that can be remeasured. But the chapter focuses on the triggers for remeasurement and the practical items of remeasurement (credibility, sensitivity, and validation). We recommend the abstract be written consistent with the content of the section.
- The chapter should include some high-level comments around frequency of remeasurement. For example, do you need to remeasure risk adjustments annually or every time you change base assumptions? This may also be dependent on whether the risk adjustment is developed as a fixed dollar amount, a per-contract or per-exposure amount, or a percentage of the base liabilities.
- It would be beneficial to the reader if there was some linkage from the remeasurement technique to the original method of determining the risk adjustment.

### **Section 8.1**

- The third paragraph states “In contrast, claim experience data that can be used to update cash flow assumptions for future claims may require a significant amount of time and volume to be deemed credible, and therefore may be updated less frequently.” It would be better if this sentence dealt with the risk adjustment instead of the cash flows around future claims.
- The fourth paragraph discusses the lack of remeasurement in certain measurement frameworks. We see little relevance in this paragraph to the topic at hand.
- The second sentence of the fifth paragraph also discusses other accounting frameworks and is not relevant to this topic.

## **Section 8.2**

- The title of this section is “Components of remeasurement,” but are these really components of remeasurement or are these a summary of Section 8.3 triggers of remeasurement? What really are the “Components of remeasurement”? They include new information due to passage of time, analysis of the new information, and application of the results of the new analysis.
- It may be useful for the bullet on “Valuation assumptions” to be more specific with an example on how a change in valuation assumption would impact the calculation of the risk adjustment.
- The bullet on “Risk adjustment techniques and the parameters for the risk adjustment calculation” is too long and undercuts itself in the last sentence.

## **Section 8.3.1**

- It would be useful to have a general insurance example here. The risk adjustment is discussed as something that may be vintaged to a specific cohort of policies. The entire liability will be re-evaluated at least annually with new business being added to the portfolio of open claims. A discussion of such a scenario would be beneficial to a non-life practitioner.
- The first bullet in the section should be clarified to state whether the block of life insurance liabilities is open or closed.
- We recommend deleting the sentence beginning with “However” as it adds nothing given the statements that follow.
- We suggest adding a further bullet to the discussion that essentially says if you have a line of business that is not in a steady state with respect to volume, the changing risk characteristics will likely require more frequent updates to the risk adjustment measurement.

## **Section 8.3.2**

- The discussion of assumption updates appears to belong more with the discussion in the second bullet of Section 8.2.
- In discussing assumption changes in this section we believe it should be more direct. Currently, the discussion is that experience studies may have different results than prior. The monograph needs to state more directly that the experience studies drive changes in assumptions.

## **Section 8.3.3**

- This title of this section, “Governance and controls on assumptions,” does not align with the text. The text starts out discussing the impact or interaction of regulatory capital requirements, liability analysis, and risk loads in pricing. Then the section ends up discussing capital requirements. These do not link well to the topic of risk adjustments. We also note the words “Governance and Controls” indicates the discussion will include information about the way an entity makes its decisions on

what to include in its financial statements (governance) and how an entity makes sure that the financial statements are using controlled processes (controls).

- Based on the content of the section, consideration should be given to changing the concept to more broadly include changes in risk appetite. This would contrast well to Section 8.3.2, which focuses on changes to the expected pattern of cash flows and addresses that an organization can change its risk appetite for a variety of reasons including government requirements, but also investor requirements or environmental approaches.

#### **Section 8.3.4**

- The opening sentence discusses significant valuation assumptions used by actuaries. It should be clarified that those are life and health insurance-related valuation assumptions. Other sources of “industry” data are available and used by actuaries for the same reasons listed, but not always actuarial professional organizations as is referenced in that opening sentence.
- It would be useful to have a subsection here that addresses environmental issues (e.g., major medical changes that materially affect life expectancy or changes in liability laws or required policy provisions). It might also be useful to add a subsection on risk management and how a company’s views may change with reinsurance (i.e., how changes in reinsurance would require rethinking risk adjustment measurement).

#### **Section 8.4**

- The second sentence of the opening paragraph needs to be cleaned up with the phrase “This may be because there may not be...”

#### **Section 8.4.1**

- This section uses the term “actuarial judgment.” This phrase has no defined meaning similar to actuarial soundness. An actuary does use judgment but it is based on something (i.e., the data and the indications from the data).
- The first two sentences in the first paragraph should be more direct.
- The word “slowly” appears to be missing from the end of the fourth sentence in the second paragraph.

#### **Section 8.4.2**

- The opening sentence should be specific to risk adjustments and not to the contract liabilities in total.
- It is not clear what the second sentence means. Does it mean knowledge of the amount that a liability will change in the aggregate due to a particular assumption change?

### **Section 8.4.3**

- The terms “insurance liabilities” and “valuation” here should read “risk adjustment.”

### **Section 8.5**

- This section should be significantly expanded. There should be real specifics about what changes in the risk adjustment have an offsetting impact on the CSM. The discussion should distinguish how this is handled in the general model and the variable fee adjustment to the general model.
- Please be more specific on where this is discussed in Chapter 5.

## ***Chapter 9—Disclosure and Communication***

### **Section 9.1**

- The fourth paragraph in this section indicates that confidence level disclosure is required at the entity level or the reporting segment. We haven’t seen this level of specificity in any publicly available document from the IASB to date. If IFRS 17 does require determination and reporting at the “entity” level, then “entity” needs to be defined.
- Rather than implying the use of a normal distribution in this analysis, it would be of more value to show how a given variance and skewness would translate to a confidence interval for various log normal distribution parameters (and if need be, a normal distribution). This would allow one to translate a non-distribution-based risk adjustment into a confidence interval, possibly using some assumptions or simplified statistics. This would be of more value than an approach to convert a distribution-based risk adjustment into a confidence interval by ignoring the original probability distribution that was used.

### **Section 9.2**

- The second paragraph should be deleted as it is repetitive of content in Section 9.1.

### **Section 9.3**

- The second paragraph indicates there is “required disclosure of sensitivity analysis for each type of insurance risk in relation to its effect on profit or loss and equity.” The 2013 exposure draft required disclosure about each type of risk other than insurance, but the disclosure section said nothing about types of insurance risk. Please confirm when IFRS 17 is finally published.

### **Section 9.4**

- The first paragraph indicates the items listed are important to communicate to the readers of financial statements as well as those responsible for financial reporting within the entity. We disagree with the latter being in the monograph, as it is going beyond what is required by disclosures around risk adjustment under IFRS 17. The items listed are reasonable for internal communication but may be too much for external disclosure unless they are specifically required by IFRS 17.

- The second paragraph should be broken up. There should also be a discussion on the order dependency of any attribution analysis.

## ***Chapter 10—Case Studies***

### **Case Study 10.1**

- This case study does not provide sufficient detail to allow the reader to replicate the process of calculating the risk adjustment using the cost-of-capital approach. It does not illustrate how the capital amount was determined. This case study could be used to illustrate the following techniques:
  - The method-of-moments approach for determining the appropriate probability distribution for a risk variable given a simple set of experience data. For this case study, lapse and mortality distributions could be illustrated.
  - The Iman-Conover method for invoking dependence in simulated data. Again, lapse and mortality risk can be used for demonstration.
  - Monte Carlo simulation of cash flows. A small subset of the scenarios used to determine the distribution of the cash flows could be illustrated.

### **Case Study 10.2**

- This case study does not provide sufficient detail to allow the reader to replicate the process of calculating the risk adjustment using the Wang Transform approach. First, the case study does not illustrate how lambda was determined. Presumably, the mean liability value, variance of the liability value, and best estimate deterministic (risk-free) liability value could be used to establish lambda. Second, the case study does not illustrate exactly how the distribution was transformed. This should be achievable given the mean, variance, and lambda. Finally, the case study does not illustrate how the risk adjustments for years 1-9 were determined.

### **Case Study 10.3**

- This case study does not provide sufficient detail to allow the reader to replicate the process of calculating the risk adjustment using the cost-of-capital approach. If the mean and variance of the liability values were provided in Case Study 10.2, the calculation of the Conditional Tail Expectation 90 capital amount could be illustrated. Also, the case study does not illustrate how the risk adjustments for years 1-9 were determined.

### **Case Study 10.4**

- This case study does provide sufficient detail to allow the reader to replicate the illustrated process, with the exception that it does not provide any detail regarding the Monte Carlo simulation and how it was used to determine the standard deviations of payment years for remaining lives. It would be helpful to see what probability distribution was used for the simulation and, ideally, how it was calibrated to a sample experience data set.
- In 10.4.4, both tables are missing one heading. The x-axis is probably “Years Since Disablement.”

### Case Study 10.6

- This case study does provide sufficient detail to allow the reader to replicate the illustrated process, with the exception of the derivation of the following formula:

$$\lambda_1 = [\ln(1-ER) - \ln(1+ULAE) - \ln(PV) - \mu AY ULR - \frac{1}{2} \cdot \text{combined } \sigma^2] / [\text{combined } \sigma \cdot \sqrt{D}]$$

It is not clear where this formula came from or how it was derived.

### Case Study 10.8

- This case study does provide sufficient detail to allow the reader to replicate the illustrated process, with the exception of the determination of theta. We suggest that an example be added that illustrates how a company might decide on a theta of 3 by reviewing its past experience for two lines of business.
- Item 4 on page 132 has a comma in the wrong place and is missing a couple of commas. More specifically: “Then u=u’ and a desired copula pair, (u,v), are generated.”