Draft Educational Note

IFRS 17 – Actuarial Considerations Related to Liability for Remaining Coverage in P&C Insurance Contracts

Committee on Property and Casualty Insurance Financial Reporting

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The actuary should be familiar with relevant educational notes. They do not constitute standards of practice and are, therefore, not binding. They are, however, intended to illustrate the application of the Standards of Practice, so there should be no conflict between them. The actuary should note however that a practice that the educational notes describe for a situation is not necessarily the only accepted practice for that situation and is not necessarily accepted actuarial practice for a different situation. Responsibility for the manner of application of standards of practice in specific circumstances remains that of the members. As standards of practice evolve, an educational note may not reference the most current version of the Standards of Practice; and as such, the actuary should cross-reference with current Standards. To assist the actuary, the CIA website contains an up-to-date reference document of impending changes to update educational notes.

MEMORANDUM

To: Members in the property and casualty insurance area

From: Steven W. Easson, Chair
Actuarial Guidance Council

Sarah Ashley Chevalier, Chair
Committee on Property and Casualty Insurance Financial Reporting

Date: June 15, 2021

Subject: **Draft Educational Note: IFRS 17 – Actuarial Considerations Related to Liability for Remaining Coverage in P&C Insurance Contracts**

The Committee on Property and Casualty Insurance Financial Reporting (PCFRC) has prepared this draft educational note to provide guidance on various actuarial considerations related to the liability for remaining coverage (LRC) in P&C insurance contracts, in accordance with IFRS 17 requirements. Specific considerations relating to P&C reinsurance contracts are also included. This draft educational note may also be of interest to life insurance practitioners.

This draft educational note is structured in sections as follows:

- Sections 1 and 2, respectively, provide an introduction and a definition of the terminology used in this draft educational note.
- Section 3 provides guidance related to the level of aggregation and financial statement presentation.
- Section 4 provides guidance related to the LRC measured under the general measurement approach (GMA).
- Section 5 provides guidance related to the LRC measured under the premium allocation approach (PAA).
- Section 6 summarizes key considerations for reinsurance contracts issued and held, including the calculation of the loss-recovery component when underlying contracts are onerous.
- Section 7 provides commentary on an illustrative example, provided in an Excel file under separate cover, of the calculation of the loss component.
- Section 8 provides guidance on considerations for determining the expected loss ratio (ELR) to be used in the minimum capital test (MCT) insurance risk calculation.

It is written from the perspective of Canadian actuaries and is not intended to duplicate any other guidance. Additional information can be found in IAA guidance or other CIA documents. The draft educational note *Compliance with IFRS 17 Applicable Guidance* provides guidance to actuaries when assessing compliance with IFRS 17. It is applicable to all educational notes pertaining to IFRS 17 and members are encouraged to review it prior to reading any educational note related to IFRS 17.

A preliminary version of the draft educational note was shared with the following committees for their review and comments, and presented to the Actuarial Guidance Council (AGC) in the months preceding its approval:

- Committee on Life Insurance Financial Reporting
- Committee on Risk Management and Capital Requirements
- Committee on the Appointed/Valuation Actuary
- International Insurance Accounting Committee
- Worker's Compensation Committee
- Group Insurance Practice Committee

A preliminary version of the draft educational note was also shared with the staff of the Accounting Standards Board (AcSB) to broaden consultations with the accounting community. Given that this draft educational note provides actuarial guidance rather than accounting guidance, the AcSB staff review was limited to citations of and any inconsistencies with IFRS 17. CIA educational notes do not go through the AcSB's due process and therefore, are not endorsed by the AcSB.

The PCFRC is satisfied it has sufficiently addressed the material comments received by the various committees and the AGC. The PCFRC notes that this draft educational note incorporates preliminary interpretations on several issues including the definition of issue date and mechanics of the loss recovery component for contracts measured under the premium allocation approach.

The creation of this cover letter and draft educational note has followed the AGC protocol for the adoption of educational notes. In accordance with the CIA's *Policy on Due Process for the Approval of Guidance Material other than Standards of Practice and Research Documents*, this draft educational note has been prepared by the PCFRC and has received approval for distribution from the AGC on June 8, 2021.

The actuary should be familiar with relevant educational notes. They do not constitute standards of practice and are, therefore, not binding. They are, however, intended to illustrate the application of the Standards of Practice, so there should be no conflict between them. The actuary should note however that a practice that the educational notes describe for a situation is not necessarily the only accepted practice for that situation and is not necessarily accepted actuarial practice for a different situation. Responsibility for the manner of application of standards of practice in specific circumstances remains that of the members. As standards of practice evolve, an educational note may not reference the most current version of the

Standards of Practice; and as such, the actuary should cross-reference with current Standards. To assist the actuary, the CIA website contains an up-to-date reference document of impending changes to update educational notes.

If you have any questions or comments regarding this draft educational note, please contact Sarah Chevalier at sarahchevalier@axxima.ca.

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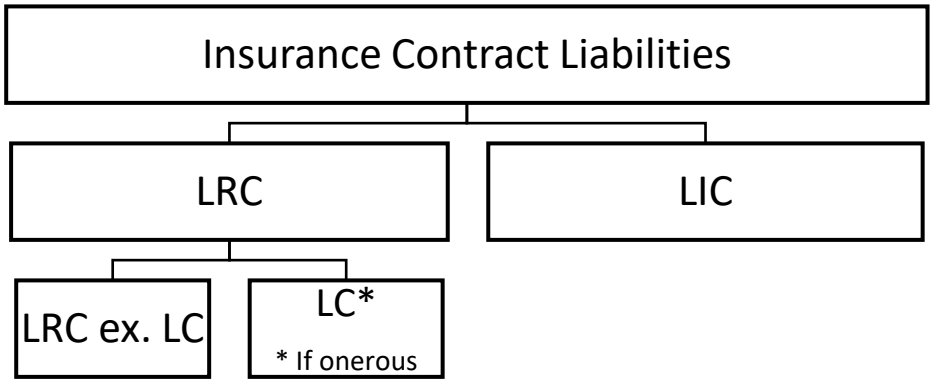
1. Introduction

IFRS® 17 Insurance Contracts (IFRS 17) establishes principles for the recognition, measurement, presentation, and disclosure of insurance contracts. The purpose of this draft educational note is to provide practical application guidance on issues relating to the IFRS 17 liability for remaining coverage (LRC) for property and casualty (P&C) entities. In this draft educational note, the use of the notation IFRS 17.XX refers to specific paragraphs of IFRS 17, where XX represents the paragraph number.

Insurance contract liabilities consist of liabilities for incurred claims (LIC) and LRC, both of which are defined terms in IFRS 17 Appendix A. The carrying amount may be in an asset position, in which case the entity would record insurance contract assets, consisting of assets for incurred claims (AIC) and/or assets for remaining coverage (ARC). For simplicity, in this draft educational note, we refer to all of the aforementioned as insurance contract liabilities. If a group of contracts is determined to be onerous, a loss component (LC) is established in the amount of the fulfilment cash flows above the carrying amount of the LRC. In this case, the two components of the LRC are the LRC excluding the LC (LRC ex. LC) and the LC.



LRC is defined within Appendix A of IFRS 17 as:

> An entity's obligation to:
>
> (a) investigate and pay valid claims under existing insurance contracts for insured events that have not yet occurred (ie the obligation that relates to the unexpired portion of the insurance coverage); and
>
> (b) pay amounts under existing insurance contracts that are not included in (a) and that relate to:
>
> (i) insurance contract services not yet provided (ie the obligations that relate to future provision of insurance contract services); or
>
> (ii) any investment components or other amounts that are not related to the provision of insurance contract services and that have not been transferred to the liability for incurred claims.

IFRS 17 prescribes three potential approaches for the measurement of insurance contracts liabilities:

- The general measurement approach (GMA), which is the default approach.
- The premium allocation approach (PAA), which is the optional simplified approach that is available under certain conditions.
- The variable fee approach (VFA), which applies to insurance contracts with direct participation features. As direct participation features are uncommon in P&C contracts, the VFA is not expected to be used by most P&C entities.

While each of these measurement approaches can be applied for the measurement of all insurance contract liabilities, differences between these approaches particularly affect the measurement of the LRC.

Scope

This draft educational note supplements the following:

- CIA revised exposure draft (document 220036, March 2020): *Incorporate changes required by the adoption in Canada of IFRS 17 Insurance Contracts, including Principles of International Standard of Actuarial Practice 4 – Actuarial Practice in Relation to IFRS 17 Insurance Contracts, into the Canadian Standards of Practice*
- CIA draft educational note (document 219020, February 2019): *Application of IFRS 17 Insurance Contracts* (IFRS 17 Application EN)

This draft educational note provides specific application guidance, as well as background and general information, to help inform Canadian actuaries when exercising judgment for the measurement of the LRC of P&C entities, including the treatment of groups of onerous contracts. The default GMA approach is discussed first; the PAA, which is a simplification of the GMA, is discussed second. The VFA is not discussed in this draft educational note.

As noted in IFRS 17.4, all references to insurance contracts also apply to reinsurance contracts held[1], unless otherwise indicated by specific references to insurance contracts issued[2] or as described in IFRS 17.60 through IFRS 17.70A for reinsurance contracts held. This draft educational note addresses insurance contracts issued, as well as specific considerations for reinsurance contracts held.

Under IFRS 17, insurance contracts issued and reinsurance contracts held are recognized and presented separately. Sections 2 through 5 present general concepts applicable to both insurance contracts issued and reinsurance contracts held. Section 6 presents additional considerations for reinsurance contracts issued and held.

Equally important to understanding the objective of this draft educational note is understanding what the draft educational note is not intended for. Consistent with IFRS 17, this draft educational note:

[1] Reinsurance contracts held are often referred to as reinsurance ceded.

[2] Reinsurance contracts issued are often referred to as reinsurance assumed. Throughout this draft educational note, the term "insurance contracts issued" encompasses all types of insurance contracts (i.e., both direct insurance contracts issued and reinsurance contracts issued).

- does not prescribe which approach or method to use for the measurement of LRC for a group of insurance contracts (group); and
- does not address the issue of the Appointed Actuary's expression of opinion.

This draft educational note does not provide detailed guidance around the treatment of insurance acquisition costs, including deferral of applicable general and administrative expenses and deferral of insurance acquisition costs to future renewals. The reader is referred to the forthcoming CIA draft educational note on the recovery of acquisition expense cash flows for further information on these topics. Similarly, while this draft educational note includes descriptions of some approaches to derive premium received, it is beyond the scope of this draft educational note to provide an exhaustive list.

In addition, the following educational notes are referenced in the commentary that follows and may serve as additional useful guidance to actuaries:

- CIA draft explanatory report (document 221040), April 2021): *IFRS 17 Expenses*
- CIA revised draft educational note (document 220159, November 2020): *Comparison of IFRS 17 to Current CIA Standards of Practice*
- CIA draft educational note (document 220063, May 2020): *IFRS 17 Risk Adjustment for Non-Financial Risk for Property and Casualty Insurance Contracts* (PCFRC Risk Adjustment EN)
- CIA draft educational note (document 220053, April 2020): *IFRS 17 – Actuarial Considerations Related to P&C Reinsurance Contracts Issued and Held* (PCFRC Reinsurance EN)
- CIA revised draft educational note (document 220103, December 2020): *Assessing Eligibility for the Premium Allocation Approach Under IFRS 17 for Property & Casualty and Life & Health Insurance Contracts* (PAA Eligibility EN)
- CIA draft educational note (document 220128, August 2020): *IFRS 17 Discount Rates and Cash Flow Considerations for Property and Casualty Insurance Contracts* (PCFRC Discounting EN)

In writing this draft educational note, the PCFRC followed these guiding principles:

- Consider Canadian-specific perspectives rather than simply repeating international actuarial guidance.
- Develop application guidance that is consistent with IFRS 17 and applicable Canadian actuarial standards of practice and educational notes without unnecessarily narrowing the policy choices available under IFRS 17.
- Consider practical implications associated with the implementation of potential approaches and methods; in particular, ensure that due consideration is given to options that do not require undue cost and effort to implement.

2. Definitions

The following terminology is used in this draft educational note:

Contractual service margin (CSM): Per Appendix A of IFRS 17, "A component of the carrying amount of the asset or liability for a group of insurance contracts representing the unearned profit the entity will recognise as it provides insurance contract services under the insurance contracts in the group."

Contract boundary: The contract boundary distinguishes future cash flows to be considered in the measurement of the insurance contract from other future cash flows. Per IFRS 17.34, "Cash flows are within the boundary of an insurance contract if they arise from substantive rights and obligations that exist during the reporting period in which the entity can compel the policyholder to pay the premiums or in which the entity has a substantive obligation to provide the policyholder with insurance contract services …"

Coverage period: Per Appendix A of IFRS 17, "The period during which the entity provides insurance contract services. This period includes the insurance contract services that relate to all premiums within the boundary of the insurance contract."

Coverage units: Coverage units are defined in IFRS 17.B119(a) as "… the quantity of insurance contract services provided by the contracts in the group, determined by considering for each contract the quantity of the benefits provided under a contract and its expected coverage period."

Date of initial recognition: For a contract that has been issued, the earliest of the date coverage begins, the date the first premium is due, and the date the contract is onerous.

Fulfilment cash flows: Present value of future cash flows plus the risk adjustment for non-financial risk.

General measurement approach (GMA): Standard approach laid out in IFRS 17 for measuring insurance contract liabilities.

Group of insurance contracts (group): As defined in Appendix A of IFRS 17, "A set of insurance contracts resulting from the division of a portfolio of insurance contracts into, at a minimum, contracts issued within a period of no longer than one year and that, at initial recognition: (a) are onerous, if any; (b) have no significant possibility of becoming onerous subsequently, if any; or (c) do not fall into either (a) or (b), if any."

Issue date: The date when the entity enters into a contractual obligation to provide the insurance coverage at given terms. The issue date could precede the date the coverage begins for P&C contracts. Determining issue date for a group of contracts would likely be performed by an entity's legal professionals.

Loss component (LC): Component of the LRC depicting the net outflow for an onerous group of insurance contracts issued, which results in the carrying amount of the LRC for the group being equal to the fulfilment cash flows and the CSM for the group being zero. The LC, and subsequent reversals in the LC, are excluded from the determination of insurance revenue.

Loss-recovery component: Component of the ARC depicting the recoveries from reinsurance contracts held applicable to a group of underlying onerous contracts. The loss-recovery component is excluded from the allocation of premiums paid to the reinsurer.

Onerous contract: Based on IFRS 17.47,

> An insurance contract is onerous at the date of initial recognition if the fulfilment cash flows allocated to the contract, any previously recognised insurance acquisition cash flows and any cash flows arising from the contract at the date of initial recognition in total are a net outflow.

A group of insurance contracts may become onerous (or more onerous) on subsequent measurement when unfavourable changes relating to future service in the fulfilment cash flows exceed the CSM.

Payment pattern: Expected pattern of payment of future cash flows.

Premium allocation approach (PAA): Simplification of the GMA that may be used by an entity to measure a group of insurance contracts if, at the inception of the group, it reasonably expects that the PAA would produce a measurement of the LRC for the group that would not differ materially from the one that would be produced by applying the GMA, or if the coverage period of each contract in the group is one year or less.

Present value: Future cash flows discounted to the valuation date.

Portfolio of insurance contracts (portfolio): Insurance contracts subject to similar risks and managed together.

Reinsurance contract: An insurance contract issued by one entity (the reinsurer) to compensate another entity for claims arising from one or more insurance contracts issued by that other entity (underlying contracts).

3. Level of aggregation and financial statement presentation

Under IFRS 17, insurance contracts are aggregated into portfolios, which are then divided into groups considering, amongst other things, the expectation regarding the net cash flows of the contracts at initial recognition (i.e., whether the contracts are expected to be onerous) and the cohort issue date. Additional guidance on separating insurance contracts into portfolios and groups is provided in Chapter 1 of the IFRS 17 Application EN.

While the recognition and the measurement of the LRC is performed at the group level, it is the combination of the LIC and LRC for portfolios of contracts that dictates the presentation of insurance contracts in the statement of financial position. An insurance contract liability results when expected cash outflows are greater than expected cash inflows for the portfolio (including LIC and LRC). In the rare circumstance that expected cash inflows are greater than expected cash outflows for a portfolio of direct contracts, an insurance contract asset is booked. Portfolios of reinsurance contracts held are usually in an asset position and portfolios of reinsurance contracts issued are usually in a liability position.

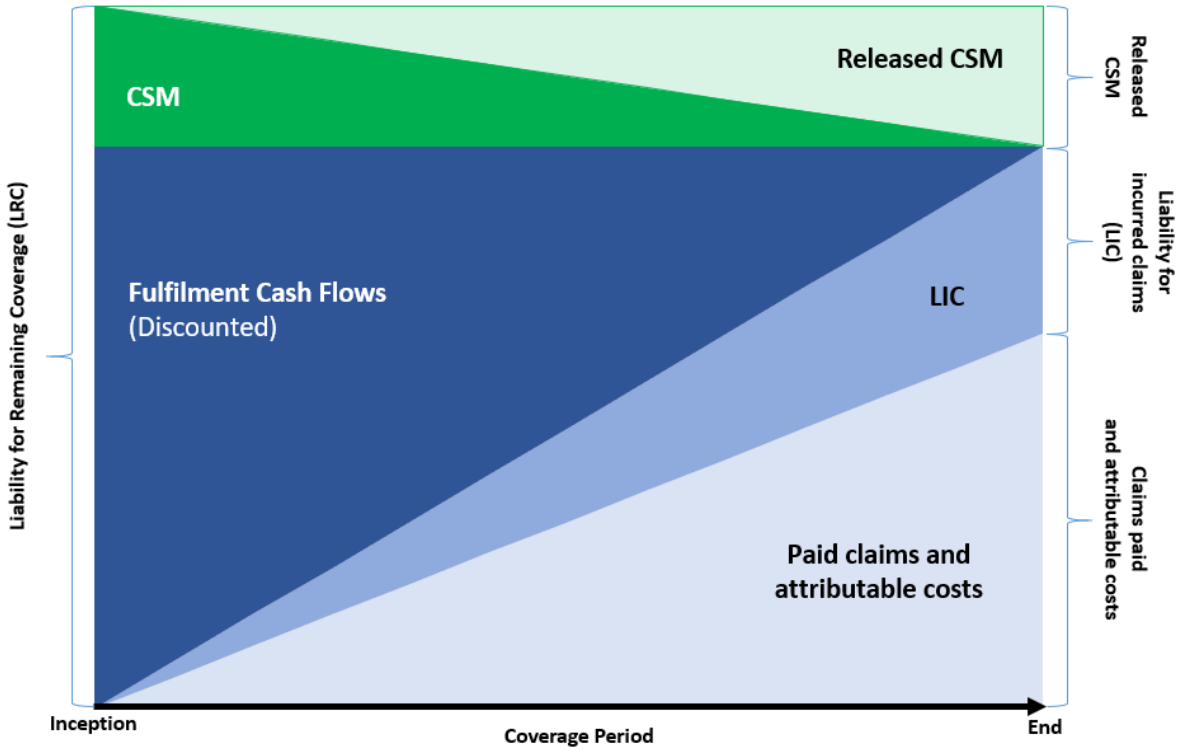
4. LRC under the GMA – Insurance contracts issued

4.1. Definition

The GMA is the standard approach for measuring insurance contracts under IFRS 17. Under the GMA, the LRC is the sum of the following elements (IFRS 17.32):

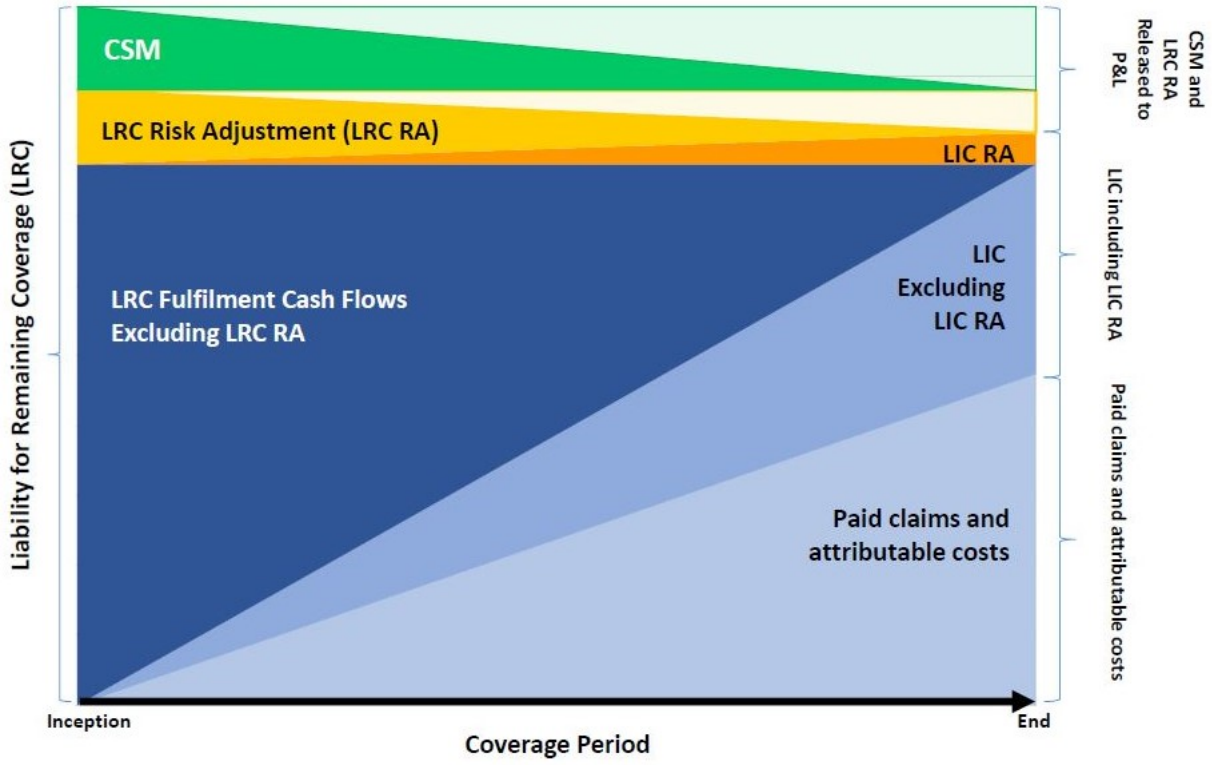
- The fulfilment cash flows related to future service, which comprise:
    - estimates of future cash flows;
    - an adjustment to reflect the time value of money and financial risk (to the extent financial risk is not reflected in the estimates of cash flows); and
    - a risk adjustment for non-financial risk (risk adjustment).
- The CSM.

The following diagram illustrates the components of the insurance contract liabilities throughout the coverage period of an of insurance contract that is not onerous:



The diagram assumes that premium is collected upfront, that acquisition costs are paid at inception, and there are no changes to the valuation assumptions. At initial recognition, the LRC is comprised of the fulfilment cash flows and the CSM. As insurance services are provided, the LRC is reduced and is replaced by paid claims and attributable costs and the LIC. The CSM for a group of insurance contracts is released and recognized in profit over the coverage period, reflecting the insurance contract services provided over each period.

A more detailed example including the risk adjustment is provided below. This diagram illustrates the risk adjustment initially as a component of the LRC at inception and, at the end of the coverage period, as a component of both the LIC and of released profit.



4.2. Allocations

IFRS 17.33 requires the LRC to be determined at the group level. The CSM is determined at the group level, however fulfilment cash flows may be determined at a different level of aggregation and then allocated to groups of contracts. IFRS 17.24 provides that, "… To measure a group of contracts, an entity may estimate the *fulfilment cash flows* at a higher level of aggregation than the group or portfolio, provided the entity is able to include the appropriate fulfilment cash flows in the measurement of the group … by allocating such estimates to groups of contracts."

Similarly, it would be acceptable to estimate cash flows at a lower level of aggregation (e.g., coverage) and aggregate up to groups of contracts.

4.3. Estimates of future cash flows

The estimates of future cash flows include all cash flows that are within the contract boundary of each contract in the group.

4.3.1. Contract boundary

IFRS 17.34 states:

> Cash flows are within the boundary of an insurance contract if they arise from substantive rights and obligations that exist during the reporting period in which the entity can compel

the policyholder to pay the premiums or in which the entity has a substantive obligation to provide the policyholder with insurance contract services … A substantive obligation to provide insurance contract services ends when:

(a) the entity has the practical ability to reassess the risks of the particular policyholder and, as a result, can set a price or level of benefits that fully reflects those risks; or

(b) both of the following criteria are satisfied:

(i) the entity has the practical ability to reassess the risks of the portfolio of insurance contracts that contains the contract and, as a result, can set a price or level of benefits that fully reflects the risk of that portfolio; and

(ii) the pricing of the premiums up to the date when the risks are reassessed does not take into account the risks that relate to periods after the reassessment date.

For most P&C insurance contracts, the contract boundary is delineated by the date of initial recognition and the expiry date of the contract, with any premiums, claims and attributable expenses relating to insurance risk on or before the expiry date included in measurement. However, a number of other factors could influence the contract boundary, including, but not limited to the following:

- Restrictions on the entity's ability to reprice after expiration of the insurance contract (e.g., rate guarantees for periods extending after the insurance contract expiry date, or caps on the amount of rate action that the entity can take), which would likely extend the contract boundary beyond the insurance contract expiry date.
- Termination or cancellation clauses included in some insurance contracts that may grant both parties to the contract the right to unilaterally terminate the contract prior to its expiry date. In this situation, the contract boundary could be shorter than the insurance contract effective period if the termination provision has commercial substance, which means that the entity has the practical ability to terminate the contract after considering all the substantive rights and obligations of the contract.
- The treatment of claims with insurance risk in the settlement pattern. Although such claims are typically treated by LIC by P&C insurance entities, the entity has the choice to include such claims in settlement in LIC or LRC unless the business is acquired, in which case such claims in settlement are included in LRC.

Refer to Section 3, Coverage Period Consideration, of the PAA Eligibility EN for a more complete discussion on contract boundary issues.

4.3.2. Measurement

The types of cash flows within the contract boundary are described in IFRS 17.B65 and IFRS 17.B66, and include both inflows such as premiums and outflows such as claims and directly attributable expenses.

Premiums

Premium inflows would normally be determined based on the balance of premiums receivable for the group of insurance contracts. The estimate would reflect, on an expected value basis, how policy-holders will exercise the contract features available, including the option to cancel the contract. The risk that the actual behaviour may differ from the expected behaviour is reflected in the risk adjustment selection.

Claims

The largest cash outflow usually relates to future claims and claim adjustment expenses. They are typically estimated by applying a selected expected loss ratio to the unexpired portion of the total premium receipts[3].

Various evaluation methods may be used to determine the future expected loss ratios in connection with the unexpired portion of insurance contracts. The method selected by the actuary may depend on a number of considerations including but not limited to the complexity of the business segments or the characteristics of the entity. For example, the future expected loss ratios may be determined based on the actuary's valuation of LIC, on the entity's budget (if reasonable), on the results of a ratemaking analysis or on an ad hoc analysis, as considered appropriate.

Generally, future expected loss ratios are based on the entity's recent experience adjusted to reflect the period during which the insurance coverage will be provided and the revenue will be earned. The actuary would consider the earning pattern underlying the calculation of the unexpired coverage, assess whether it reflects the exposure to risk, and select assumptions accordingly. Examples of adjustments to the historical experience would include, but are not limited to, the following:

- Loss trends applied to adjust historical cost levels to the average accident date underlying the unexpired portion of the insurance contracts.
- Impacts from legislative changes (including mandated benefit modifications) that are substantively enacted.
- Recent court decision impacts relating to insurance coverage.
- Changes in mix of business.
- On-level factors applied to adjust historical experience to the rate level underlying the unexpired portion of the insurance contracts.
- Catastrophe and large losses loadings.
- Seasonality adjustments to the indicated expected loss ratios may need to be applied if the claims occurrence pattern is not uniform throughout the exposure period of the unexpired coverage (e.g., seasonal occurrences of hurricanes). Depending on the line of business, the seasonality adjustment may not be significant. However, for some business segments (e.g., property catastrophe treaty reinsurance), seasonality may be a meaningful consideration.

[3] Calculated based on the unearned premium.

- Insurance contract terms taking into account the coverage period of the insurance contract and the future period covered by the unexpired portion of the total premium receipts. For example, for insurance contracts with a term longer than 12 months (such as warranties or multi-year contracts), assumptions for the expected loss ratio need to take into consideration trends that are expected over the remaining term of these insurance contracts.

Expenses

Information on expenses that are part of the insurance contract boundary, and therefore the future cash flows comprised within the unexpired portion of the total premium receipts, is provided in the draft explanatory report on IFRS 17 Expenses for Property & Casualty and Life & Health Insurance[4].

4.4. Effect of discounting

It is typical to determine the aggregate amount of cash flows for the various components of the LRC as described in Section 4.3, and then to determine the timing of these cash flows by applying the relevant payment pattern to the aggregate amount for each component of the LRC.

The present value of the future cash flows is then determined by discounting these cash flows based on their timing and the applicable discount rates.

4.4.1. Selecting payment patterns for the future cash flows

The payment pattern for premiums receivable is typically based on the schedule of installment premiums for the group of contracts.

For a given business segment, the payment pattern for claims and claim adjustment expenses in the LRC is generally consistent with that used for discounting the claims and claim adjustment expenses in the LIC. Payment patterns for the LIC are normally selected and applied on an accident year basis, and it is typically assumed that the average accident date occurs at the midpoint of the accident year. The PCFRC Discounting EN provides additional guidance on selecting a payment pattern for the LIC.

When estimating the timing of LRC cash flows on a group basis, it is necessary to either:

- estimate a payment pattern on a group basis; or
- adjust the accident year payment pattern used for LIC to a pattern consistent with the average accident date of the group.

Section 7 describes a method for adjusting an LIC payment pattern for the average accident date of the unexpired coverage of a group of contracts.

When expenses vary with claims or premiums, it may be reasonable to assume that they follow the same payment pattern as for claims or premiums respectively.

[4] Canadian Institute of Actuaries, *Draft Explanatory Report: IFRS 17 Expenses* (2021).

4.4.2. Discount rates

The future cash flows are discounted using a yield curve as at the valuation date that is consistent with the timing, currency, and liquidity characteristics of the future cash flows.

Please refer to the PCFRC Discounting EN, in particular Sections 4 to 6, for further considerations in determining the applicable yield curve.

4.5. Risk adjustment

Guidance on the risk adjustment can be found in the PCFRC Risk Adjustment EN.

4.6. Contractual service margin

As per IFRS 17.38, "The contractual service margin is a component of the asset or liability for the group of insurance contracts that represents the unearned profit the entity will recognise as it provides insurance contract services in the future." As such, a CSM exists only for groups of contracts that are not onerous while for groups of onerous contracts, a CSM does not exist but instead, a loss component exists.

At initial recognition, the CSM is set at the amount such that no profit is recognized, i.e., total cash inflows minus total cash outflows for the group, with a floor of zero. An implication of this is that in addition to estimating fulfilment cash flows as at the valuation date, the actuary must also estimate fulfilment cash flows as at the date of initial recognition. The fulfilment cash flows as at the date of initial recognition would include all claims and expenses attributable to the group, including any cash flows incurred before initial recognition.

At subsequent reporting dates, the CSM is rolled forward applying IFRS 17.44:

> For *insurance contracts without direct participation features*, the carrying amount of the contractual service margin of a group of contracts at the end of the reporting period equals the carrying amount at the start of the reporting period adjusted for:
>
> (a) the effect of any new contracts added to the group (see paragraph 28);
>
> (b) interest accreted on the carrying amount of the contractual service margin during the reporting period, measured at the [locked-in] discount rates specified in paragraph B72(b);
>
> (c) the changes in fulfilment cash flows relating to future service as specified in paragraphs B96–B100, except to the extent that:
>
> (i) such increases in the fulfilment cash flows exceed the carrying amount of the contractual service margin, giving rise to a loss (see paragraph 48(a)); or
>
> (ii) such decreases in the fulfilment cash flows are allocated to the loss component of the liability for remaining coverage applying paragraph 50(b).
>
> (d) the effect of any currency exchange differences on the contractual service margin; and
>
> (e) the amount recognised as insurance revenue because of the transfer of insurance contract services in the period, determined by the allocation of the contractual service margin remaining at the end of the reporting period (before

any allocation) over the current and remaining coverage period applying paragraph B119.

Under step (e), the CSM at the end of the reporting period (before recognizing any amounts in profit or loss to reflect the insurance contract services provided in the period) is allocated equally to each coverage unit provided in the current period and those expected to be provided in the future. The amount allocated to coverage unit provided in the current period is recognized in profit or loss.

4.7. Coverage units

Coverage units are used to determine the amount of the CSM that is recognized in profit and loss in a reporting period. The CSM is released based on coverage units representing the insurance contract service provided in the period compared to the insurance contract services expected to be provided in the future. This assumes that the insurance contracts do not provide investment return services, as is generally the case with P&C insurance contracts.

The number of coverage units in a group is the quantity of insurance contract services provided by the contracts in the group, determined by considering for each contract the quantity of the insurance contract services provided under a contract and its expected coverage duration.

The determination of coverage units is not an accounting policy choice but involves judgment and estimates to best achieve the principle of reflecting the insurance contract services provided in each period. In applying judgment, the actuary would follow the key principles below:

- Quantity of benefits would generally not be based on expected claims or release of risk adjustment. The quantity of benefits provided under a contract is related to the amount that can be claimed by the policy-holder and not the expected costs to be incurred by the entity. The different levels of service across periods need to be reflected in the determination of coverage units. The expected contract duration considers expected lapses and cancellations.
- It is optional to use discounting in the calculation of quantity of benefits provided under a contract. If the actuary has opted to use discounting, the selection of discount rates to be used for that purpose would be based on judgment, but applied consistently, as IFRS 17 is silent on this topic.
- The coverage period extends to the end of the period in which insurance contract services are provided and would not extend to the period over which claims are settled (unless claims in settlement are included in LRC rather than LIC).

IFRS 17 does not prescribe a particular form or basis for the definition of coverage units. Therefore, as a general statement, any coverage unit construct that satisfies the above requirements would in theory be an acceptable approach. Section 6.16 of the IFRS 17 Application EN lists a number of methods that may result in reasonable proxies for coverage units including straight line allocation reflecting the expected number contracts in the group, use of maximum contract cover in each period, use of cover amounts for which the policy-

holder could validly claim, and use of premiums if determined to approximate the quantity of benefits.

Detailed guidance on the selection of appropriate coverage units for the purpose of amortizing the CSM for insurance contracts and examples of CSM amortization can be found in the draft CIA educational note *IFRS 17 Coverage Units for Life and Health Insurance Contracts*. Section 6, Contractual Service Margin and Loss Component, of the CIA draft educational note *Application of IFRS 17 Insurance Contracts* provides information about the CSM and how it might change due to a range of factors.

The appendices of the International Accounting Standards Board® (IASB)'s May 2018 Transition Resource Group (TRG) paper AP05[5], prepared by IASB staff for the TRG meeting discussion, contain several examples of coverage units. Possible bases for determining amortization patterns based on coverage units for P&C insurance contracts include the following:

Type of product	**Amortization pattern**
Contracts with same policy limit throughout the coverage period	Uniform
Contracts with decreasing policy limit over the coverage period (e.g., mortgage insurance contracts)	Declining
Contracts with increasing policy limit over the coverage period (e.g., product warranty contracts with replacement coverage)	Increasing

The table above presents the coverage units for a single insurance contract over the coverage period. When determining the coverage units for the group of insurance contracts, the actuary would consider:

- the expectation of contract lapses (including cancellations) which would decrease coverage units; and
- the consequence of weighing the coverage units for the individual contracts included within the group, including the effect of new contracts recognized in the group prior to the reporting date.

For example, assume that an insurance contract with a limit of $1,000,000 has a coverage period of January 1, 2023 to December 31, 2023. The coverage units for this contract would be calculated as follows:

[5] IFRS Foundation, 'Determining quantity of benefits for identifying coverage units,' https://cdn.ifrs.org/-/media/feature/meetings/2018/may/trg-for-ifrs-17/ap05-quantity-of-benefits-for-identifying-coverage-units.pdf, (accessed 10 May 2021).

Reporting period	(1) Coverage Units in the Reporting Period	(2) Expected Remaining Coverage Units at End of the Reporting Period	(3) = (1) / [(1)+(2)] % Opening CSM Amortized in the Reporting Period	(4) Reporting Period Opening CSM	(5) = (3) x (4) Amortiza-tion of CSM	(6) = (4) – (5) Ending CSM	(7) = (1) / [(1) Total] Equivalent Incremental CSM Earning Pattern
Q1 2023	1,000,000	3,000,000	25.0%	1,000	250	750	25%
Q2 2023	1,000,000	2,000,000	33.3%	750	250	500	25%
Q3 2023	1,000,000	1,000,000	50.0%	500	250	250	25%
Q4 2023	1,000,000	0	100.0%	250	250	0	25%
Total	4,000,000						100%

In the above example, assume that the contract had a CSM at initial recognition of $1,000, there is no discounting and there are no changes in assumptions over the contract period. Then:

- in Q1, 25.0% x $1,000 = $250 of the CSM would be recognized as profit, and the ending CSM would be $1,000 - $250 = $750;
- in Q2, 33.3% x $750 = $250 of the CSM would be recognized as profit, and the ending CSM would be $750 - $250 = $500;
- in Q3, 50.0% x $500 = $250 of the CSM would be recognized as profit, and the ending CSM would be $500 - $250 = $250; and
- in Q4, 100.0% x $250 of the CSM would be recognized as profit, and the ending CSM would be $250 - $250 = $0 as the contract is expired.

If this contract is cancelled at the end of Q3 2023, then the coverage units would be calculated as follows:

Reporting period	(1) Coverage Units in the Reporting Period	(2) Expected Remaining Coverage Units at End of the Reporting Period	(3) = (1) / [(1)+(2)] % Opening CSM Amortized in the Reporting Period	(4) Reporting Period Opening CSM	(5) = (3) x (4) Amortiza-tion of CSM	(6) = (4) – (5) Ending CSM
Q1 2023	1,000,000	3,000,000	25.0%	1,000	250	750
Q2 2023	1,000,000	2,000,000	33.3%	750	250	500
Q3 2023	1,000,000	0	100.0%	500	500	0
Q4 2023	0	0	n/a	0	0	0

In the above example, assume that the contract had a CSM at initial recognition of $1,000, there is no discounting and there are no changes in assumptions over the contract period. Then:

- The coverage unit and CSM calculations are identical to the previous example.

  Given that the contract is cancelled at the end of Q3, there are no expected remaining coverage units at the end of Q3 [Column (2)]. Therefore, the full CSM is amortized and the ending CSM at the end of Q3 is zero.

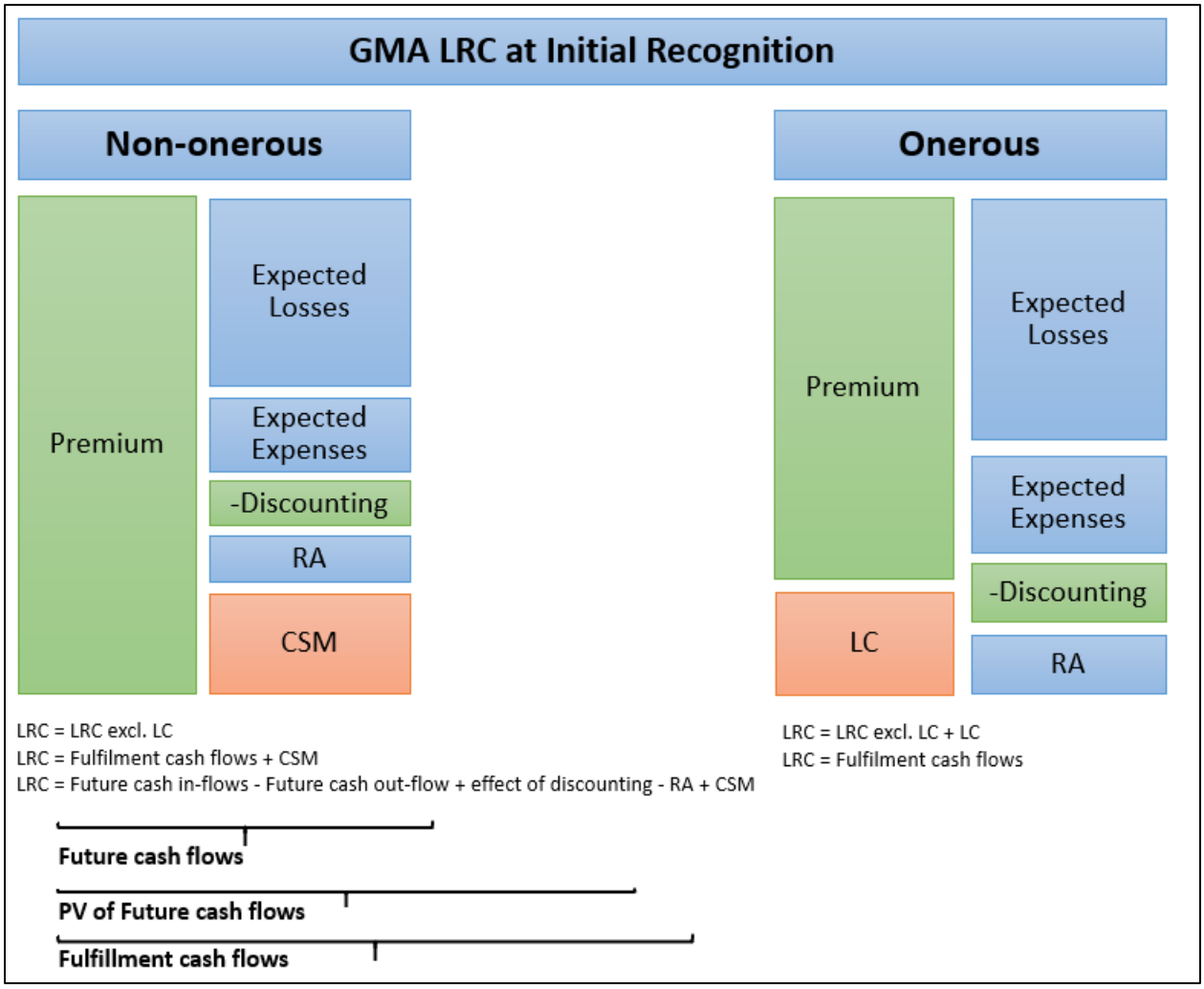
4.8. Loss component

Initial recognition

Based on IFRS 17.47, "An insurance contract is onerous at the date of initial recognition if the fulfilment cash flows allocated to the contract, any previously recognised insurance acquisition cash flows and any cash flows arising from the contract at the date of initial recognition in total are a net outflow."

In such cases, the CSM is floored at zero, a loss is recognized in the statement of financial performance and the carrying amount of the LRC is equal to the fulfilment cash flows. The amount of this loss is recognized in the statement of financial position as a LC in the LRC. An LC for a group of insurance contracts is reflected in the LRC on the issue date of the insurance contracts.

The diagram below compares the components of non-onerous to onerous groups at initial recognition.



Subsequent measurement

Assuming that there are no changes in underlying assumptions, the LC is expected to be systematically decreased. If there are changes in underlying assumptions that are favourable, the changes would be allocated to the LC until it is reduced to zero, and then a CSM may be re-established.

Conversely, a group of insurance contracts can be classified as non-onerous at initial recognition and become onerous at a subsequent reporting period if unfavourable changes in the fulfilment cash flows exceed the carrying amount of the CSM. In such a case, the CSM would be reduced to zero and then an LC would be established.

The entity is required to separately track the portion of the LRC that is related to the LC. IFRS 17.50 states that:

> After an entity has recognised a loss on an onerous group of insurance contracts, it shall allocate:
>
> (a) the subsequent changes in fulfilment cash flows of the liability for remaining coverage specified in paragraph 51 on a systematic basis between:

(i) the loss component of the liability for remaining coverage; and

(ii) the liability for remaining coverage, excluding the loss component.

(b) solely to the loss component until that component is reduced to zero:

(i) any subsequent decrease relating to future service in fulfilment cash flows allocated to the group arising from changes in estimates of future cash flows and the risk adjustment for non-financial risk; …

For groups measured under the GMA, an example of a systematic allocation of subsequent changes in fulfilment cash flows of the LRC between the LC and the LRC excluding the LC can be found in IE93 of the IASB publication Illustrative examples on IFRS 17 Insurance Contracts.

Per IFRS 17.51(a), only the following subsequent changes in the fulfilment cash flows of the LRC would need to be allocated, "(a) estimates of the present value of future cash flows for claims and expenses released from the liability for remaining coverage because of incurred insurance service expenses; (b) changes in the risk adjustment for non-financial risk recognised in profit or loss because of the release from risk; and (c) insurance finance income or expenses."

If, at subsequent reporting periods, there are favourable changes in the fulfilment cash flows for a group of contracts such that the LC is reduced to zero and the entity expects to recognise profit as it provides insurance contract services in the future (i.e., on the unexpired portion of the insurance coverage), then a CSM is established or re-established.

5. LRC under PAA – Insurance contracts issued

The PAA measurement for insurance contracts issued is set out in IFRS 17.55–59. IFRS 17 refers to the PAA as a simplified measurement approach, allowing for simplifications in the measurement, recognition and disclosures associated with insurance contract liabilities under certain conditions. While this draft educational note only covers the PAA measurement of the LRC, the PAA also allows for a simplification of the measurement of the LIC with respect to discounting when all cash flows are expected to be received or paid within one year of the date claims are incurred (refer to IFRS 17.59(b) for more details).

The key simplification for LRC is that for groups of contracts that are not onerous, there is no requirement to calculate fulfilment cash flows (i.e., estimates of future cash flows, effect of discounting and risk adjustment) nor is it necessary to identify and amortize the CSM. For groups of contracts that are onerous, the LC must be measured based on the fulfilment cash flows and therefore there is no simplification in the measurement approach.

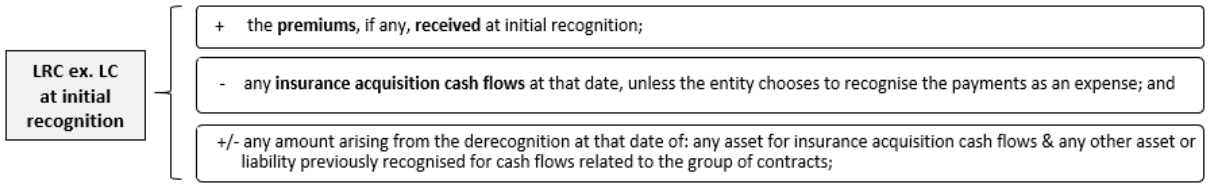
The PAA can be applied to groups that meet the PAA eligibility criteria at inception. Contracts with a coverage period of one year or less, such as most P&C insurance contracts, would automatically qualify for PAA; however, for longer duration contracts, a quantitative test may be required. For more information on PAA eligibility, the actuary may refer to the PAA Eligibility EN.

As described in Sections 5.1 and 5.2 of this draft educational note, once a group of contracts qualifies for the PAA, the LRC excluding the LC ("LRC ex. LC") is calculated the same way for onerous and non-onerous contracts. The following table summarizes the total LRC for onerous and non-onerous groups:

	Non-onerous group	Onerous group
Total LRC	LRC ex. LC	LRC ex. LC **+** LC

5.1. Initial recognition

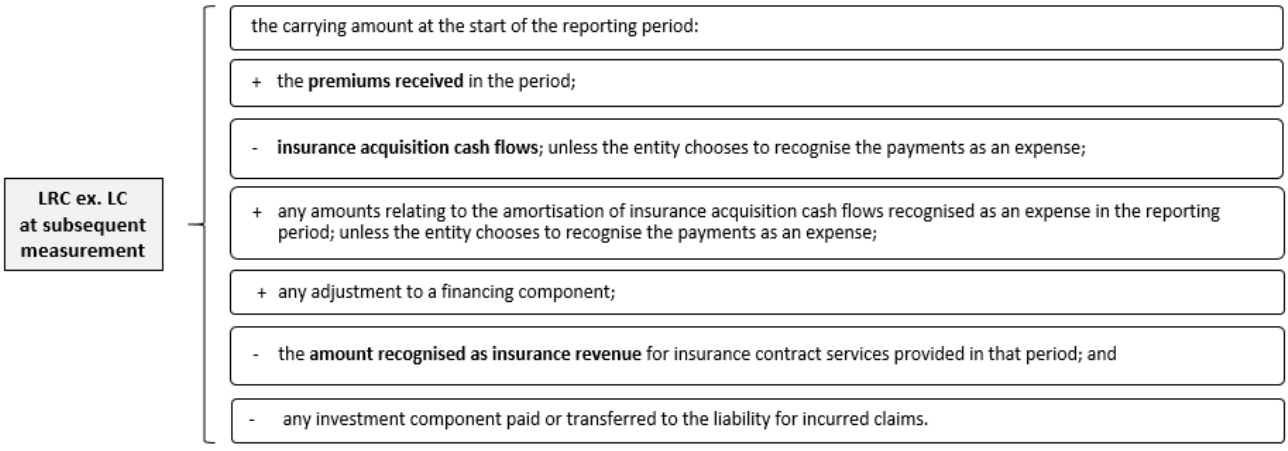
Per IFRS 17.55(a), on initial recognition, the carrying amount of the LRC ex. LC is measured as:



The LRC ex. LC for the group, at initial recognition, is derived as any premiums received at initial recognition, less acquisition cash flows paid (unless they are recognized as expenses when incurred). The third point in the definition refers to acquisition cash flows and other cash flows such as pre-paid premium that are incurred prior to initial recognition.

5.2. Subsequent measurement

Per IFRS 17.55(b), at the end of each subsequent reporting period, the carrying amount of the LRC ex. LC under the PAA is calculated as:



In simpler terms, at subsequent measurement, the LRC ex. LC for the group of contracts reflects:

- premiums received up until the end of the reporting period less insurance revenue associated with premium for the insurance contract services provided up until the end

of the reporting period[6], which is mathematically equivalent to the unexpired portion of the total premium receipts[7], net of premiums receivable;

- less acquisition costs that are yet to be expensed; and
- plus adjustments for financing and investment components.

Guidance on premiums, acquisition costs and adjustments for financing and investment comments are provided in Sections 5.4, 5.5, and 5.6 respectively.

Example

A group of insurance contracts are issued with a coverage period of two years. The following are details of the cash flows:

Description	Total amount	Additional information
Expected premiums	$1,000	Received at inception
Directly attributable acquisition expenses	$200	Paid at inception
Directly attributable maintenance expenses	$50	Incurred in year 1
Non-directly attributable acquisition expenses	$30	Paid at inception
Non-directly attributable maintenance expenses	$50	$25 per year
Also assume the following: • No claims are incurred in Year 1 • Expected premium receipts allocated on the basis of the passage of time • Acquisition costs are deferred and amortized over the 2-year coverage period • There is no discounting		

Insurance service result for Year 1:

Insurance Revenue		
Revenue recognized under the premium allocation approach	500	← $1,000 expected premiums over 2 years
Total iInsurance Revenue	***500***	
Insurance Service Expenses		
Incurred claims (excluding investment components) and other incurred insurance service expenses	50	← $50 maintenance expenses
Amortization of insurance acquisition cash flows	100	← $200 amortized over 2 years
Total Insurance Service Expenses	***150***	
Insurance Service Result	***350***	
Other Expenses	***55***	← $30 acquisition and $25 maintenance non directly attributable expenses
Profits / Losses	***295***	

[6] The insurance revenue associated with premium for the insurance contract services provided up until the end of the reporting period is commonly referred to as "earned premium".

[7] The unexpired portion of the total premium receipts is commonly referred to as "unearned premium."

The LRC balance at the end of Year 1 consists of:

- premiums received, less insurance revenue recognized: $1,000 - $500 = $500; and
- less acquisition costs that are yet to be expensed: $200 - $100 = $100.

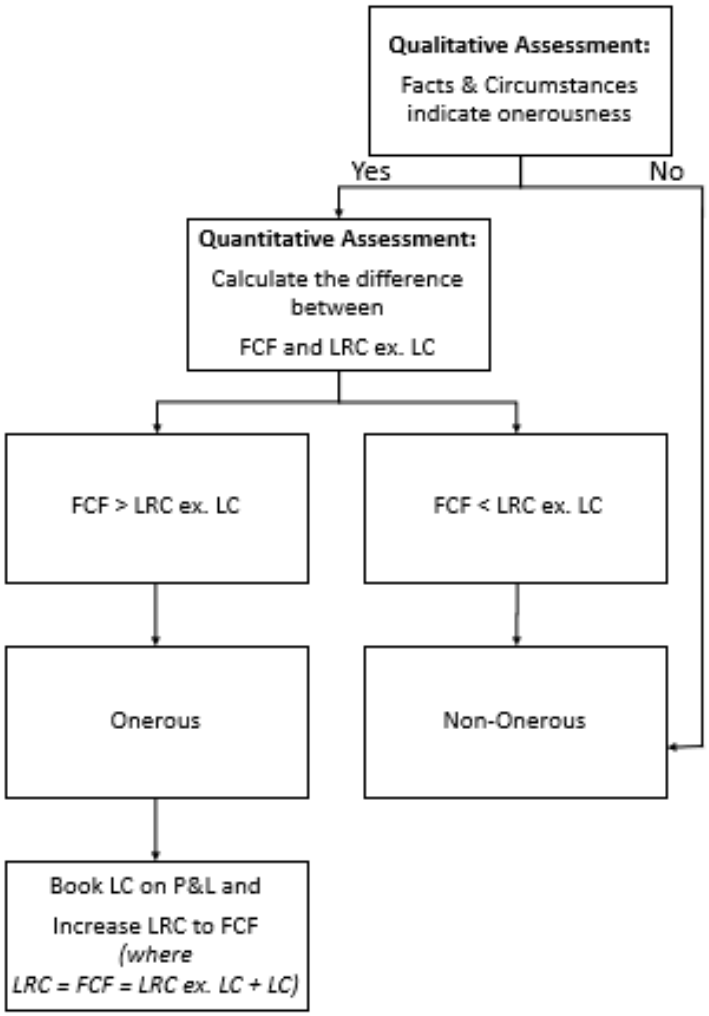
Given that there are no adjustments for financing and investment components, and assuming that the contracts are not onerous, the LRC is $500 - $100 = $400.

5.3. Onerous groups of contracts

While IFRS 17 does not prescribe the responsibilities of actuaries and other stakeholders with respect to the identification or measurement of onerous groups of insurance contracts issued, the sections below provide practical guidance to actuaries on the following:

- Qualitative assessment: facts and circumstances indicating onerous contracts
- Quantitative assessment: calculation of fulfilment cash flows and deriving the LC
- LC reporting

The following decision tree summarizes these steps for each group of contracts:



where:

- FCF denotes fulfilment cash flows; and
- P&L denotes the profit and loss statement, which is referred to as the statement of financial performance under IFRS 17.

It is worth noting that if an insurance contract issued is assessed as onerous, an LC is recognized on the issue date of the contract, or when the contract first becomes onerous. If the entity makes the assessment of onerous contracts for a set of contracts rather than individual contracts, an LC is recognized on the issue date of the first insurance contract in the group, or when the group becomes onerous.

5.3.1. Qualitative assessment: Facts and circumstances

As a simplification from the GMA, IFRS 17.18 allows entities applying the PAA to rely on the assumption that no contracts in the portfolio are onerous at initial recognition unless facts and circumstances indicate otherwise.

While a quantitative assessment would only be required when facts and circumstances indicate onerousness, a challenge facing entities applying the PAA is that IFRS 17 does not define "facts and circumstances." Note that onerousness exists when the fulfilment cash flows (FCF) (i.e., including the risk adjustment) are higher than the LRC ex. LC. In broad terms, facts and circumstances can arise from any existing information readily available to management without undue cost or effort. These may include the business plan, pricing strategy, key performance indicators, or other metrics used to track financial results, in addition to facts and circumstances that could arise from external factors such as changes in regulatory rules. A metric such as the combined ratio may be an option to identify onerous contracts. The draft IFRS 17 Application EN in Section 7.14 states that:

> The wording "facts or other circumstances" in this paragraph implies that an explicit test is not required. An explicit test is only needed when there is reason to believe that the portfolio[8] containing the contracts may be onerous. This is clearly a matter of judgement. Possible indicators that may inform the decision to conduct testing include:
>
> a. a group of contracts in the portfolio that are known to be onerous at initial recognition;
> b. past losses in the portfolio;
> c. aggressive underwriting or pricing;
> d. unfavourable experience trends; and
> e. unfavourable external conditions.

While most P&C insurance contracts issued have a short coverage period (12 months or less), facts and circumstances could change such that a group of contracts, which are not onerous at inception, subsequently become onerous or vice versa. Such circumstances could include changes in expected losses, discount rates, or risk adjustment. It may be useful for entities to establish clear policies and procedures to capture facts and circumstances that might indicate that a group of insurance contracts issued is onerous. These facts and circumstance would act as triggers for the quantitative assessment of onerous contracts.

The onerous assessment is relevant from when contracts are issued to the beginning of the coverage period (IFRS 17.25) as well as while the contracts are in their coverage period (IFRS 17.57); after the end of the coverage period, changes in claims expectations are reflected within the LIC rather than in the LRC.

[8] Note: while the reference refers to portfolios, the evaluation would be done at the contract level.

5.3.2. Quantitative assessment

The facts and circumstances identified as triggers would assist in the identification of groups of insurance contracts issued for which a quantitative assessment is indicated.

The requirements for onerous assessment are described in IFRS 17.57:

> If at any time during the coverage period, facts and circumstances indicate that a group of insurance contracts is onerous, an entity shall calculate the difference between:
>
> (a) the carrying amount of the liability for remaining coverage determined applying paragraph 55; and
>
> (b) the fulfilment cash flows that relate to remaining coverage of the group, applying paragraphs 33–37 and B36–B92. However, if, in applying paragraph 59(b), the entity does not adjust the liability for incurred claims for the time value of money and the effect of financial risk, it shall not include in the fulfilment cash flows any such adjustment.

While the entity would continue to use the PAA for onerous groups of insurance contracts issued (for example, to simplify the financial disclosures), in order to assess the LC the actuary would calculate both the fulfilment cash flows relating to remaining coverage and the PAA LRC ex. LC. For more detail on fulfilment cash flows, refer to Section 4.

An LC exists if the fulfilment cash flows calculated (relating to the remaining coverage) exceed the PAA LRC ex. LC. In such cases, the entity would recognize a loss in the statement of financial performance and increase the LRC by the excess amount.

5.3.3. Loss component reporting

If the quantitative assessment confirms the presence of an LC, the entity is required to:

- recognise a loss in the insurance service expense immediately for the net outflow for the onerous group of insurance contracts issued; and
- establish an LC as part of the LRC for the onerous group.

For onerous groups of insurance contracts issued measured using the PAA, the total LRC is equal to the fulfilment cash flows relating to the remaining coverage, which is disclosed as two separate components:

- LRC ex. LC: as described in Sections 5.1 and 5.2
- LC: the remaining part of fulfilment cash flows

At subsequent measurements, the LC is released from the insurance service expense and amortized from the LRC over the duration of the contracts. The LC balance is reduced to zero by the end of the coverage period.

Although under IFRS 17, the LC must be remeasured at each reporting date, several approximations may be reasonable as long as the total LRC is reasonably similar to the fulfilment cash flows over the lifetime of the group of contracts. The approach outlined by IFRS 17.58 implies a full recalculation of the fulfilment cash flows at each reporting date, but one

approximation may be based on a simplified release of the LC. For most groups of contracts, the fulfilment cash flow approach may be more appropriate, due to potential changes in assumptions related to fulfilment cash flows such as seasonality of expected losses, however the simplified LC release approximation could be appropriate for groups of contracts where assumptions related to fulfilment cash flows do not vary significantly from one reporting date to another.

A simplified approximation for determining the LC is compared to the required FCF approach in the following table:

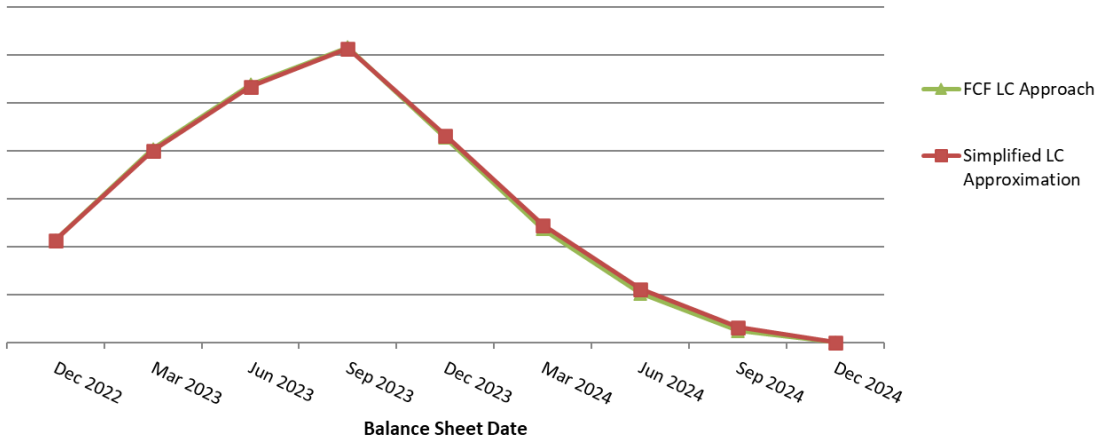
	Fulfilment cash flows approach	**Simplified approximation**
Initial recognition	LC* = GMA fulfilment cash flows relating to remaining coverage – LRC ex. LC	
Subsequent measurement	Full recalculation of LC at each subsequent measurement: LC* = Fulfilment cash flows relating to remaining coverage (GMA) – LRC ex. LC	No full recalculation of fulfilment cash flows required. LC = LC at initial recognition – Release of LC (see below) and considering the new insurance contracts added to the group and the contracts that leave the group during the period.
Release of LC	The difference between the LC calculated explicitly at each measurement date which, in turn, depends on earning on coverage and changes in assumptions.	Based on a pre-defined pattern, such as pro-rata to unexpired coverage or expected earning pattern

*An LC exists if the FCF exceeds the LRC ex. LC.

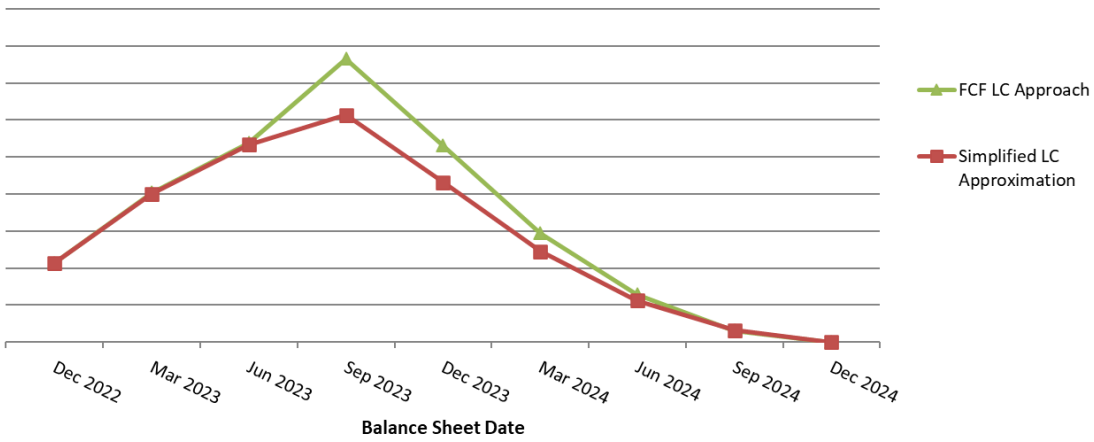
While the required approach and the suggested simplification calculate the fulfilment cash flows at initial recognition of the group of insurance contracts issued, over time they may diverge from each other as the LC is released and as more contracts are added to the group. One way to evaluate the appropriateness of the simplified approximation is to compare how changes in assumptions impact the LC under each approach; then evaluate the likelihood of those changes. Changes in major drivers of the fulfilment cash flow calculations such as the selected expected loss ratios (adjusted to the time period they will be applied to), unearned premiums, discounting, and risk adjustment would need to be evaluated, however other assumptions such as attributable non-acquisition expenses could be assessed as well. Other assumptions, such as changes in premium receiving pattern, will not have a material impact as the impact on fulfilment cash flows will be offset on LRC ex. LC.

For an onerous group of insurance contracts issued in a stable environment, the required approach and the suggested simplification may produce similar LC release patterns with a slight difference related to discounting. The fulfilment cash flows approach more precisely reflects

the unwind/release of the discount associated with past service; in the simplified approximation, the unwind/release of the discount follows the selected pattern. The following graph illustrates the hypothetical LC pattern for a group of insurance contracts issued in a stable environment, under the fulfilment cash flows approach and the simplified approximation; in this example, the group consists of insurance contracts with 12-month duration for which the coverage is earned pro-rata to time.



While in stable environments the simplified approximation may provide a good estimate, the assumptions driving the fulfilment cash flows calculations would need to be tracked to ensure the accuracy of the estimate. The fulfilment cash flows approach recognizes changes in assumptions at each reporting period, however if these changes are not reflected in the simplified approach, the LC associated with the two approaches could diverge. The following graph illustrates a hypothetical situation under which the fulfilment cash flows approach recognizes an increase in the expected loss ratio, however this change is not reflected in the simplified approximation.



To reduce the potential gap between the two approaches, the simplified approximation could reflect the updated assumptions for each new quarter added to the calculations.

The simplified approximation has the advantage of easy implementation and maintenance, and a flexible LC release pattern. However, a weakness of the approach is that it does not consider changes in assumptions during subsequent recognition periods and the method may not be responsive enough in certain circumstances.

On the other hand, the fulfilment cash flows approach has the advantage of being responsive to changes in assumptions at subsequent measurement periods. The total LRC is always equal to the fulfilment cash flows and this approach is considered to be more in line with the GMA LC, however this approach is more complex to maintain.

Under both approaches, the LC at initial recognition, the additional LC incurred as contracts are added to the group, the reversal of the LC, and the adjustments to the LC are booked to insurance service expense. There is no separation of the effect of the LC between the insurance service expense and the insurance finance expense.

5.4. Premium

In measuring the LRC ex. LC, two major components related to premium are the premium receipts and allocated insurance revenue[9] (conceptually similar to earned premium). While premium receipts are a fundamental component of the LRC ex. LC, these are often determined by the entity's accounting or IT professionals with limited actuarial involvement. More information around the challenges an entity may face in deriving premium received can be found in Appendix A.

While the PAA measurement is generally based on actual cash flows, revenue recognition (earned premium) is based on the passage of time, unless the pattern of release of risk differs significantly from the passage of time. If it does, then revenue is recognized based on the expected timing of incurred insurance service expenses (IFRS 17.B126). This implies a two-step process for determining whether revenue is recognized pro rata to time, or as a function of a seasonal pattern:

- If the pattern of release of risk (i.e., incurred losses and loss adjustment expenses) is uniform, then the revenue would be earned pro rata to time.
- If the pattern of release of risk is not uniform, then the revenue would be earned based on the pattern of expected insurance service expenses (i.e., incurred losses and loss adjustment expenses, as well as other insurance service expenses).

While IFRS 17 does not prescribe the responsibilities of the actuary with respect to insurance revenue, the analysis needed to evaluate the revenue recognition pattern may be seen as more actuarial in nature as it requires the estimation of expected losses and associated expenses and the estimation of their timing. The IFRS 17 Application EN discusses revenue recognition in paragraph 7.12:

[9] The portion of the IFRS 17 insurance revenue (i.e., the revenue for insurance contract services provided in the period) associated with the premium.

> In practice, unless there are particular reasons to expect an uneven pattern, a good starting point might be an a priori pro-rata assumption, modified to the extent demanded by credible experience. There is an inherent tension between using the largest possible portfolio to maximise credibility and smaller sub-portfolios to detect intra-portfolio variations. The best balance is a matter of judgement.
>
> There is also the question of what does "*differs significantly from the passage of time*" mean? This is not defined by the standard although the term "significant" is often used in accounting frameworks to relate that something has more than a remote likelihood of causing a misstatement. This appears to be a lower threshold than something that is material, an item in accounting that would have an impact on the reader of the financial statement.

For short-duration contracts, the actuary will need to use judgment in assessing whether adjustments to uniform earning patterns are required. Many short-duration contracts may be exposed to seasonality due to considerations such as weather, catastrophe events or geography for example. However, these may not materially change the expected earning pattern of the group. Other short-duration contracts may cover cyclical risks, such as leisure and lifestyle products (e.g., snowmobiles, recreational vehicles); while these products may have a clear non-uniform earning pattern, an adjustment may not be required when product diversification evens the earning pattern.

In evaluating the earning pattern for multi-year policies, the actuary may find it useful to consider pricing studies to obtain assumptions around the expected timing of losses. There may be some products, such as warranty, where the expected losses are not uniform throughout the coverage period and an uneven earning pattern to calculate the insurance revenue may be needed.

5.5. Acquisition costs

Acquisition cash flows are also considered more accounting in nature and actuaries would need to work with their finance counterparts on these issues. Only costs that are directly attributable to the portfolio of insurance contracts to which the group belongs are included in the measurement of the liability. Other costs that do not meet this requirement will be accounted for outside of insurance service results on the financial statements as "other expenses."

The measurement and recognition of acquisition cash flows is applied differently under the PAA, when compared to the GMA. Under the PAA, an entity may elect the option to recognize acquisition cash flows as expenses when it incurs those costs, as long as the coverage period of each contract in the group at initial recognition is no more than one year as described in IFRS 17.59(a).

Under the 59(a) election, acquisition expenses incurred prior to or at initial recognition of a contract would be excluded from the assessment of whether the contract is onerous. The 59(a) election therefore reduces the likelihood of onerous contract classifications; however, it does front-end the recognition of expenses.

If the acquisition cash flows are not recognized as expenses when incurred, the standard requires acquisition costs attributable to future groups of insurance contracts (i.e., groups that are not recognized yet) to be deferred under IFRS 17.28B-28C. These acquisition costs related to future contracts are not part of the LRC.

More details on acquisition expenses are available in the draft report on IFRS 17 Expenses for Property & Casualty and Life & Health Insurance.

5.6. Financing and investment components

5.6.1. Significant financing component

One of the simplifications of the PAA is that there is no requirement to reflect the time value of money on the LRC unless there is a significant financing component. IFRS 17.56 outlines that an adjustment for significant financing component is not required when, at initial recognition, the expected time between providing each part of the service and the related premium due date is no more than one year. This is further confirmed by the Basis of Conclusion IFRS 17.BC292(a) which states that, "when the period between premiums being due and the provision of service is one year or less, the group is deemed not to have a significant financing component."

Where the expected time between premium receipts and providing that portion of the service is over one year, the entity may need to provide evidence that the associated financing component is not material if it chooses not to reflect it in the LRC. The notion of significant financing component is beyond the scope of this draft educational note. It is covered in IFRS 15.60–61, which can be a source for more detailed information. IFRS 15.61 states, "The objective when adjusting the promised amount of consideration for a significant financing component is for an entity to recognise revenue at an amount that reflects the price that a customer would have paid for the promised goods or services if the customer had paid cash for those goods or services when (or as) they transfer to the customer (ie the cash selling price)…"

For groups where a significant financing component exists, the financing component would reflect the time value of money associated with the mismatch in the timing of premium receipts and the service provided for that portion of the policy at each measurement date.

There are different circumstances under which a significant financing component can arise. For example, it can occur as a result of premium receipts at least a year prior to service being provided; another example is that it occurs as a result of premium receipts at least a year after the service has been provided. In the first case, the transaction benefits the entity as the policy-holder finances the entity's activities by the pre-payment of the premium; in the second case, the transaction benefits the policy-holder as in this scenario the entity finances the service (premium is due after service has been provided). This draft educational note focuses on the first scenario, as the second scenario is not generally found in P&C contracts.

For a group of contracts where premium is received prior to that portion of the service being provided, interest would accrue on the portion of the premium associated with the remaining service. The interest rate used would be consistent with the IFRS 17 discount rates as determined at initial recognition. More detailed guidance around the discount rates can be found in the PCFRC Discounting EN.

The financing component would form part of the LRC and would be earned over time as insurance revenue proportional to the service provided, per IFRS 17.B120. While the standard does not prescribe the exact calculation to accumulate and release the financing component, the following illustrative example presents one possible approach:

Acquisition cost	0
Premium received	Effective date
Policy term (yrs)	3
Discount rate at initial recognition (R)	2%
Premium earned pro rata	
Contract is not onerous	

	Opening LRC	Premium received	Insurance finance expense	Insurance revenue "financing component"	Insurance revenue "premium"	Insurance revenue	LRC balance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	prior (7)	(a)	(b)	(c)	(a)	(4)+(5)	(1)+(3)+(6)
Initial recognition	-	3 000	-	-	-	-	**3 000**
YR1	3 000		60	(20)	(1 000)	(1 020)	**2 040**
YR2	2 040		41	(40)	(1 000)	(1 040)	**1 040**
YR3	1 040		21	(61)	(1 000)	(1 061)	**-**

(a) Given

(b)=(Opening LRC)*R

(c)=(Sum of Insurance finance expense - Sum of prior Insurance revenue "financing component") x % of remaining service provided in period

At each reporting period, the financing component is calculated on the future service portion of premium receipts (and the future service portion of the financing component recognized in prior periods). As a result, it may not be necessary to track the actual timing between the premium receipts and the portion of the service provided. Consideration may also be given to acquisition expenses that are paid at the same time or before premium is received; such expenses would reduce the base of the financing component calculations. Actuaries are encouraged to consult with their accounting counterparts on this issue.

5.6.2. Investment component

The standard defines investment component as, “The amounts that an insurance contract requires the entity to repay to a policyholder in all circumstances, regardless of whether an insured event occurs.”

P&C insurance contracts issued do not typically include investment components, therefore this component of the LRC ex. LC is not discussed in this draft educational note. Specific considerations for P&C reinsurance contracts are provided in Section 6.6.

Summary comparison of the GMA and PAA LRC

The following table summarizes key differences between the LRC as measured under the GMA and the PAA:

Area	**GMA**	**PAA**
Application	All P&C contracts	All P&C contracts with a coverage period of one year or less are eligible for PAA; PAA eligibility must be tested for contracts of longer duration
Initial measurement	Present value of cash flows + Risk adjustment + CSM	If not onerous, premiums received less initial acquisition costs unless acquisitions costs are recognized as expenses as incurred If onerous, present value of cash flows plus risk adjustment
Cash flow projections	Yes	No, unless the contract is onerous
Risk adjustment	Yes	No, unless the contract is onerous
CSM	Yes (if the contract is issued and is not onerous)	No
Loss component	Yes, if onerous	Yes, if onerous
Option to immediately recognize acquisition costs	No	Yes, if the coverage period of all contracts in the group is one year or less
Revenue	Is comprised of expected claims and other expected insurance service expenses, release of risk adjustment and release of CSM (based on coverage units)	Pro rata to time or the timing of insurance service expenses
Onerous contract test at initial recognition	A quantification is always required	A quantitative test is performed if indicated by a qualitative assessment (facts and circumstances)

6. Considerations for reinsurance contracts issued and held

This section supplements the PCFRC Reinsurance EN and Chapter 9 of the IFRS 17 Application EN.

The concepts which are analogous to the LRC and LC for insurance/reinsurance contracts issued are termed asset for remaining coverage (ARC) and loss-recovery component for reinsurance contracts held.

6.1. Grouping of reinsurance contracts held

Section 2 of the PCFRC Reinsurance EN provides considerations for the grouping of reinsurance contracts held. The grouping of reinsurance contracts held may be different than the grouping of the corresponding underlying contracts; in such cases, the actuary would apply a systematic and rational methodology to determine the reinsurance applicable to underlying insurance contract groups.

6.2. Recognition of Reinsurance Contracts Held

IFRS 17.62 states that the entity recognizes a group of reinsurance contracts held from the earlier of:

- The beginning of the coverage period of the group of reinsurance contracts held; and
- The date the entity recognizes an onerous group of underlying insurance contracts, if the entity entered into the related reinsurance contract held in the group of reinsurance contacts at or before that date.

IFRS 17.62A states an additional consideration for reinsurance contracts held that provide proportionate coverage, "… an entity shall delay the recognition of a group of reinsurance contracts held that provide proportionate coverage until the date that any underlying insurance contract is initially recognized, if that date is later than the beginning of the coverage period of the group of reinsurance contracts held."

The following table summarizes the recognition of the underlying insurance contracts as well as the corresponding reinsurance contracts covering them:

Situation		**Recognition in financial statements**	
Underlying insurance contracts	**Corresponding reinsurance contracts held**	**Underlying insurance contracts**	**Corresponding reinsurance contracts held**
Issued and not onerous, but before the coverage period begins	Reinsurance contract held is entered into	No	No
	Reinsurance contract held is not entered into	No	No
Issued and onerous, but before the coverage period begins	Reinsurance contract held is entered into	Yes	Yes
	Reinsurance contract held is not entered into	Yes	No
In force	Reinsurance contract held is in effect	Yes	Yes
	Reinsurance contract held is not in effect	Yes	No

IFRS 17 does not define what constitutes “entering into” a reinsurance contract held. However, it is generally understood that a contract has been entered into when it is binding on both parties to the contract. As a result, the contract may be entered into before coverage begins. For example, obtaining signed lines on a reinsurance contract held may constitute entering into the reinsurance contract held.

It is worth mentioning that the recognition of reinsurance contracts under IFRS 17 differs from the recognition of reinsurance contracts under the IFRS 4 premium liabilities calculation, in which the actuary is required to estimate the expected net cost of any reinsurance for contracts expected to apply to underlying contracts that have been issued (but where the reinsurance may, or may not, have been entered into at the valuation date). Under IFRS 17, only the reinsurance treaties entered into are reflected, but all cash flows related to all underlying contracts expected to attach within the contract boundary under these treaties, including underlying contracts that have not yet been issued, are used in the valuation The ability of the entity to reassess and reprice risks would also be considered.

6.3. Boundary of reinsurance contracts issued and held

The reader is referred to Sections 5.2.3 and 5.2.4 of the PCFRC Reinsurance EN for guidance on determining the contract boundary and coverage period for reinsurance contracts issued or held.

Question 9.12 of the IFRS 17 Application EN specifically addresses considerations when a reinsurance contract held covers multiple years of underlying insurance contracts or attachments.

The implications are summarized in Section 5.3.2 of the PCFRC Reinsurance EN, "When estimating the [ARC] for reinsurance contracts held valued under the GMA, the ceding company would include all projected cash flows, including those related to underlying contracts that have not yet been issued, unless the reinsurance contract includes unilateral cancellation conditions."

Example 3 in Appendix A of the IASB's September 2018 TRG paper AP05[10], prepared by IASB staff for the TRG meeting discussion, illustrates the accounting treatment of a 24-month proportional reinsurance contract issued and recognized on January 1 that includes a three-month unilateral notice period to both the entity and the reinsurer with respect to new business reinsured. At initial recognition, the cash flows that must be considered within the contract boundary are those arising from underlying contracts expected to be issued and ceded within the three-month period (i.e., by March 31). As at the reporting date of March 31, the cash flows related to underlying contracts that are expected to be issued and ceded in the next three-month period are outside the existing contract boundary and related to future reinsurance contracts held. The contract boundary is determined at the date of initial recognition; in this example, a new reinsurance contract, recognized on April 1, will reflect coverage on the underlying contracts issued and reinsured from April 1 to June 30.

If, for example, the above reinsurance contract included a six-month unilateral notice period instead of a three-month notice period, at the reporting date of March 31, the reinsurance cash flows for the period from April 1 to June 30 would have to be projected as long as the cedant has the substantive right to receive services or to pay reinsurance premiums. The substantive right to receive services would end if the reinsurer has the practical ability to reprice the reinsurance premiums for existing cessions and the substantive obligation to pay reinsurance premiums ends if the cedant has the practical ability to recapture the existing cessions. Note that "practical ability" differs from legal right and takes into consideration facts and circumstances that might prevent the cedant from taking action such as fees or penalties, the need for reinsurance, and the availability of reinsurance in the market.

6.4. Risk of non-performance for reinsurance contracts held

When estimating the LRC under the GMA, the actuary would determine a probability-weighted provision to account for the risk of non-performance of the reinsurer, including consideration for reinsurance default, coverage dispute, and other risk of non-performance. The risk of non-performance may vary by reinsurer and based on the collateral available to mitigate the risk of non-performance. Considerations for estimating the risk of non-performance are described in Section 3.2 of the PCFRC Reinsurance EN.

[10] IFRS Foundation, 'Cash flows that are outside the contract boundary at initial recognition', https://www.ifrs.org/-/media/feature/meetings/2018/september/trg-insurance/ap05.pdf, (accessed 19 March 2021).

IFRS 17.63 states: "… In addition, the entity shall include in the estimates of the **present value of the future cash flows** [emphasis added] for the group of reinsurance contracts held the effect of any risk of non-performance by the issuer of the reinsurance contract, including the effects of collateral and losses from disputes."

The risk of non-performance would be included in the measurement of the estimates of future cash flows (i.e., undiscounted basis) for reinsurance contracts held, although IFRS 17.63 does allow for the risk of non-performance to be reflected in discount rates.

The risk of reinsurance non-performance includes both the risk of default and disputes. In determining the adjustment for the risk of reinsurance non-performance, the actuary would consider the financial strength of reinsurers, any concentration risk as well as the length of time over which the liabilities are expected to be settled.

IFRS 17.67 states that "changes in the fulfilment cash flows that result from changes in the risk of non-performance by the issuer of a reinsurance contract held do not relate to future service" and do not adjust the CSM.

6.5. CSM and loss-recovery component

6.5.1. CSM excluding loss recovery component

For insurance contracts and reinsurance contracts issued, the CSM represents the unearned profit that the entity will recognize as it provides insurance contract services in the future. For reinsurance contracts held, the concept of CSM is modified to recognize that for a group of reinsurance contracts held there is no unearned profit but instead a net cost or net gain on purchasing the reinsurance.

The CSM for reinsurance contracts held, excluding the loss-recovery component, is determined in the same manner as for insurance contracts issued (see Section 4.6), but the CSM can be positive or negative thereby deferring initial losses as well as initial gains. If the amount paid for reinsurance is greater than the inflows expected from the reinsurer plus the risk adjustment, this represents a net cost of purchasing reinsurance and the resulting CSM is booked in an asset position. In the rare case that there is a net gain from purchasing reinsurance, the resulting CSM is negative and is booked in a liability position.

6.5.2. Coverage units

The guidance on coverage units provided in Section 4.7 applies broadly to reinsurance contracts issued and held; coverage units are calculated consistently with the amounts of insurance contract services provided by the contracts and consider both additions and cancellations of underlying contracts.

For reinsurance contracts that require the reinsurer to indemnify the reinsured for losses incurred during the reinsurance contract period (loss-occurring contracts), the coverage unit pattern would typically be uniform, assuming that no significant growth or cancellations are expected.

For reinsurance contracts that cover reinsured losses on policies incepting during the contract period (risk-attaching contracts), the coverage unit pattern would typically be rising to reflect the policies attaching under the contract, and then declining as the underlying policies expire.

Theoretically, the coverage units would be determined based on the expected underlying units in force at various points in time, as this reflects the quantity of insurance contract services available. Using individual underlying policy limits to estimate coverage units is a reasonable approach however, one key practical issue is data availability if policy limits are not readily available. Alternatives may include:

- coverage units based on the number of underlying contracts in force, if the underlying risks are homogeneous (similar coverage limits); and
- coverage units based on premium earning pattern, if premiums are expected to be proportional to the quantity of benefits provided, are not receivable in different periods to the insurance services, and do not reflect different probabilities of claims for the same insured event in different periods rather than different levels of stand-ready service.

If using policy limits to estimate coverage units, the actuary would consider adjustments if there are significantly skewed underlying limits (e.g., high-limit underlying policies written at the beginning of the reinsurance contract period and low-limit underlying policies written at the end of the reinsurance contract period).

When the reinsurance contract covers multiple lines of business with varying limits for the underlying risks, basing coverage units on the premium earning pattern may be a practical approximation.

There are several potential approaches to determining the coverage units for an adverse development cover contract. The coverage unit pattern would generally be declining over time. When the adverse development cover has a claim limit, approaches[11] for determining the quantity of benefits may include:

- comparing the contractual maximum amount that can be claimed in each period with the remaining contractual maximum amount that can be claimed as a constant amount for each future coverage period; and
- comparing the expected amount of underlying claims covered in the period with the expected amount of underlying claims remaining to be covered in future periods. This method may not work when the underlying reserves are set at expected value and there is no adverse development on the reinsurance contract on an expected basis.

When the adverse development cover does not have a claim limit, approaches[12] for determining the quantity of benefits may include the following:

- Determining the coverage units based on the expected amount of underlying claims covered in the period with the expected amount of underlying claims remaining to be covered in future periods (i.e., expected pattern of release of underlying losses). For example:

[11] These approaches are also mentioned in Agenda Paper 05, Example 8 of the May 2018 TRG meeting.
[12] These approaches are also mentioned in Agenda Paper 05, Example 9 of the May 2018 TRG meeting.

Accident year	Claims expected to be settled in					Total
	Year +1	Year + 2	Year + 3	Year + 4	Year + 5	
Year – 4	177,000	0	0	0	0	177,000
Year – 3	391,000	391,000	0	0	0	782,000
Year – 2	419,000	210,000	210,000	0	0	839,000
Year – 1	399,000	399,000	200,000	200,000	0	1,198,000
Year	1,978,000	1,319,000	1,319,000	659,000	659,000	5,934,000
Total	**3,364,000**	**2,319,000**	**1,729,000**	**859,000**	**659,000**	**8,930,000**
Coverage units	**37.7%**	**26.0%**	**19.4%**	**9.6%**	**7.4%**	**100.0%**

- Determining the coverage units based on an equal weight during the length of the settlement of underlying liabilities. This approach is based on the rationale that the entity would stand ready to pay for claims over the lifetime of the claims run-off. For this reason, it may be reasonable to use the expected settlement period of the claims to determine the length of time over which to amortize the coverage units.

  The nature of the claims covered, and its effect on the length and uncertainty of the settlement period, would be considered. For example, the actuary may separate the claims covered by the adverse development contract into:

  - groups of claims expected to be settled over one year;
  - groups of claims expected to be settled over two years;
  - groups of claims expected to be settled over three years; and so on.

  Coverage units for the entire adverse development contract would then be weighted based on a systematic approach, such as the underlying liabilities. For example:

Accident year	Coverage units					Underlying liabilities
	Year +1	Year + 2	Year + 3	Year + 4	Year + 5	
Year – 4	100%	0%	0%	0%	0%	177,000
Year – 3	50%	50%	0%	0%	0%	782,000
Year – 2	33%	33%	33%	0%	0%	839,000
Year – 1	25%	25%	25%	25%	0%	1,198,000
Year	20%	20%	20%	20%	20%	5,934,000
Total						**8,930,000**
Coverage units	**26.1%**	**24.2%**	**19.8%**	**16.6%**	**13.3%**	**100.0%**

6.5.3. Loss-recovery component

When an entity recognizes a LC on a group of underlying insurance contracts and these underlying contracts are covered by reinsurance contracts held (see table in Section 6.2), a portion of the LC is offset by a gain on reinsurance contracts held. This offset is called a loss-recovery component and is recorded as part of the ARC for reinsurance contracts held:

- when the reinsurance contracts held are measured using the GMA, the loss-recovery component adjusts the CSM of reinsurance contracts held; and

- when the reinsurance contracts held are measured using the PAA, the loss-recovery component adjusts the carrying amount of the ARC instead of adjusting the CSM.

Based on IFRS 17.B119D, the loss-recovery component is determined by multiplying:

- the loss recognized on the underlying insurance contracts (i.e., the LC); and
- the percentage of claims on the underlying insurance contracts the entity expects to recover from the group of reinsurance contracts held.

This calculation only applies at initial recognition or when the direct group first becomes onerous per IFRS 17.66A. Further, IFRS 17.B119E allows an entity to include in an onerous group of insurance contracts both onerous insurance contracts covered by reinsurance and onerous contracts not covered by reinsurance. In such cases, the entity would apply a systematic and rational method of allocation to determine the portion of the LC that relates to insurance contracts covered by reinsurance.

IFRS 17.B119F notes that after an entity has established a loss-recovery component, the loss-recovery component would be adjusted to reflect changes in the loss component of the underlying insurance contracts. The carrying amount of the loss-recovery component would not be greater than the portion of the carrying amount of the loss component of the underlying insurance contracts that the entity expects to recover from the group of reinsurance contracts held.

An important implication of the approach prescribed in IFRS 17 is that the establishment of a loss recovery component does not depend on whether entering into the reinsurance agreement results in a net gain or a net loss. In both instances, the loss-recovery component would be identical.

Inversely, when an entity is "worse off" by purchasing reinsurance, the entity is still required to record a loss-recovery component to offset the loss on the underlying direct contracts based on the percentage of claims expected to be recovered.

The approach prescribed in IFRS 17 is generally consistent with the concept of proportionate reinsurance, where financial cash flows (e.g., premiums, claims, acquisition expenses) are proportional. Under these circumstances, it follows that the reinsurance effect on the LC would also be proportional to the claims recovered.

This is not necessarily the case for non-proportionate reinsurance, where the percentage of expected claims to be recovered may not be proportional to other cash flows such as premiums and maintenance expenses. Nevertheless, IFRS 17 requires the use of the percentage of expected claims approach and the actuary would not calculate a loss-recovery component directly based on the fulfilment cash flows of the reinsurance contracts.

IFRS 17 does not prescribe a specific approach for determining the percentage of expected claims to be recovered, and therefore the actuary would use judgment in determining this assumption. The following is one approach which is thought to be consistent with the requirements of IFRS 17.

The actuary may consider the expected emergence pattern of incurred losses and loss adjusting expenses, but not other sources cash flows such as premiums and expenses. These losses may

reflect the time value of money, consistent with the discount rates used to determine the LRC and would exclude the risk adjustment. The payment patterns, discount rates and risk adjustments may vary for the underlying contracts and the corresponding reinsurance contracts. Finally, the expected claims to be recovered may consider the risk of non-performance of the reinsurer.

Similarly, as described for the release the LC for groups measured under the PAA (see Section 5.3.3), the actuary may use a simplified approach to determine the percentage of claims to be recovered when the percentage is not expected to change materially from one reporting date to another.

6.6. Investment components

Section 4 of the PCFRC Reinsurance EN provides guidance on investment components. Investment components are included in the LRC or ARC however the insurance revenue and insurance service expenses presented in profit or loss exclude any investment components.

7. Illustrative example – Loss component calculation

The LC is evaluated based on an analysis of the fulfilment cash flows. For groups of contracts that are onerous and measured under the PAA approach, the LC is calculated at each evaluation date by comparing the fulfilment cash flows to the LRC ex. LC as measured under the PAA approach. An example provided in Appendices A and B illustrates the estimation of the LC.

The initial step of the LC calculation included in the Appendices is determining the appropriate direct unearned premium (UPR) for each group of contracts that facts and circumstances indicate may be onerous. The illustrative example presents two categories of UPR for each potential onerous group:

- The UPR at the date of evaluation for contracts for which the coverage period has begun on or before the evaluation date.
- The UPR[13], equivalent to expected written premium, for contracts that have been issued but the coverage period has not yet begun at the date of evaluation.

In the example, the resulting UPR is adjusted for expected cancellations over the remaining coverage period of the insurance contracts.

The largest component of the fulfilment cash flows relates to future claims and loss adjustment expenses which are estimated by applying a selected ELR and an unallocated loss adjustment expense (ULAE) factor to the UPR by contract group. The expected losses and adjustment expenses are then discounted to the evaluation date by multiplying by a discount factor, as illustrated in Appendix B, sheet 1, based on the selected discount curve and average accident date of the UPR. The calculation of the average accident date will vary at each subsequent evaluation date as the calendar year cohort matures.

[13] This is not UPR in the traditional sense as the premium has not yet been "written" because the contracts are not yet effective.

Premiums that are receivable, such as installment premiums, will need to be discounted based on the expected premium payment pattern for each particular group. An example showing how the discounted premium factor is calculated is provided in Appendix B, sheet 2.

The calculation of the LC is continued in Appendix A, sheet 2, by applying the risk adjustment, the acquisition costs, and the other attributable expenses to the discounted losses and loss adjustment expenses. Although the illustrated example presents risk adjustment as a proportion of discounted losses and ULAE, IFRS 17 does not prescribe this particular risk adjustment methodology. For example, the risk adjustment may be determined as a proportion of profit margin and/or may be undiscounted. Groups of contracts that have been issued but are not yet effective need to include future acquisition costs in the calculation of the fulfilment cash flows while groups of contracts that are currently in force need to include the fixed deferred acquisition expenses and the variable deferred acquisition net of cancellation in the calculation of the fulfilment cash flows. A loading for attributable expenses should also be included in the fulfilment cash flows.

The final step is to compare the fulfilment cash flows to the PAA LRC (premium received net of earned premium less deferred acquisition expenses) to determine the LC.

The fulfilment cash flows, including the losses, loss adjustment expenses, attributable expenses, and risk adjustment should be calculated on a present value basis. With regard to the time value of money, the cash flows associated with deferred acquisition expenses would also be considered but are not generally material to the calculation of the fulfilment cash flows.

Calculation of the average accident date

For a given business segment, the payment pattern for discounting the claims and adjustment expenses underlying the period for remaining coverage would normally be consistent with that used for the LIC. The future accident period payment patterns of the LIC would typically be selected and applied on an accident year basis and discounted to the valuation date. However, as presented in the illustrative example, an adjustment would be required to reflect the average accident date (AAD) underlying the period for remaining coverage.

For example, assuming premium writings occur uniformly in a calendar year and the corresponding losses are also incurred uniformly throughout the year, the mean earning date and the mean accident date of a future accident year occurs at 0.50 years or halfway through the year. For the expected losses underlying a group's period of unexpired coverage, the AAD involves calculating a weighted average or mean of the future accident dates using declining exposures as weights.

As an example, consider a group that consists of one-year policies written uniformly through the year (from January 1 to December 31) with a valuation date of December 31:

> Let x = future accident date underlying the unexpired coverage relating to 12-month policies
>
> Let f(x) = the loss exposure earned on a given future accident date
>
> = 1 – x; where $0 \leq x \leq 1$

And x = 0 is the valuation date and x = 1 is one year later (assuming annual policies) i.e., the last date the loss exposure exists.

Let the average accident (or earned) date equal integrating over the values 0 through 1, divided by the sum of the probability.

$$= \frac{\int_0^1 x\, f(x)dx}{\int_0^1 f(x)dx} = \frac{1}{3}\,\text{year}$$

Thus, the AAD of the unexpired coverage for the group can be calculated as one-third of a year or four months (May 1).

The AAD of a particular group will vary based on the valuation date (e.g., December 31, March 31). Additionally, the AAD of groups that are onerous, but not yet effective, must be calculated separately.

The following table provides the results of the AAD calculation for a sample of groups for which *x*=0 (December 31, Year 1). The column labelled Group 1 provides the formula for the group of 12-month policies described above and, in the Appendix, corresponds to the area of the parallelogram, as at December 31, 2023, shaded in orange. Group 2 is the same group as Group 1 but valued six months later as at June 30, 2023; in the Appendix, Group 2 corresponds to the area of the June 30, 2023 parallelogram shaded in orange. Group 3 is not illustrated in the Appendix but provides the AAD formula for a group of six-month policies. Group 4 consists of onerous policies that are issued two months in advance of their effective date; in the Appendix, Group 4 is shaded in blue.

	Group 1	Group 2	Group 3	Group 4
Policy duration	12 months	12 months	6 months	12 months
Classification	Not onerous	Not onerous	Not onerous	Onerous
Issue dates	Jan 1 to Dec 31, Year 1	Jan 1 to Dec 31, Year 1	Jul 1 to Dec 31, Year 1	Nov 1 to Dec 31, Year 1
Effective dates	Jan 1 to Dec 31, Year 1	Jan 1 to Dec 31, Year 1	Jul 1 to Dec 31, Year 1	Jan 1 to Feb 28, Year 2
Valuation date	Dec 31, Year 1	Jun 30, Year 2	Dec 31, Year 1	Dec 31, Year 1
f(x)	*1-x*	*1-x*	*0.5 - x*	$\begin{cases} x, & 0 \le x < \frac{2}{12} \\ \frac{2}{12}, & \frac{2}{12} \le x < 1 \\ \frac{14}{12} - x, & 1 \le x \le \frac{14}{12} \end{cases}$
AAD formula	$\frac{\int_0^1 x\, f(x)dx}{\int_0^1 f(x)dx}$	$\frac{\int_{0.5}^1 x\, f(x)dx}{\int_{0.5}^1 f(x)dx}$	$\frac{\int_0^{0.5} x\, f(x)dx}{\int_0^{0.5} f(x)dx}$	$\frac{\int_0^{14/12} x\, f(x)dx}{\int_0^{14/12} f(x)dx}$
AAD result	0.3333	0.6667	0.1667	0.5833
AAD at valuation date	0.3333	0.1667	0.1667	0.5833
AAD date	May 1, Year 2	Sep 1, Year 2	Mar 1, Year 2	Aug 1, Year 2

8. MCT considerations

8.1. Introduction

The Office of the Superintendent of Financial Institutions Canada, l'Autorité des marchés financiers, and other provincial regulatory authorities have indicated their intention to adapt

the insurance capital guidelines (Minimum Capital Test or MCT Guidelines) applicable to P&C entities effective with the implementation of IFRS 17. The expected loss ratio (ELR) is used in the derivation of the insurance risk margin for unexpired coverage (as described in the MCT guideline) for P&C entities using the PAA to determine their LRC for a given group of insurance contracts. For P&C entities using the GMA to determine their LRC for a given group of insurance contracts, the applicable insurance risk margin for unexpired coverage is derived directly from the estimate of LRC reflected in the financial statements, and an explicit estimate of the ELR is not required for MCT purposes.

8.2. Expected loss ratios for MCT

The expected loss ratio for MCT is a best estimate of the future ELR that is applied to the estimated revenue for the remaining coverage period. As used in this draft educational note, the "remaining coverage period" refers to the period during which remaining amounts of acquisition cash flows and premiums receivable are to be brought into revenue. In deriving the ELR for MCT, the actuary would consider the revenue basis to which it is applied (e.g., insurance revenue on a basis consistent with the statement of profit or loss), including consideration of whether the business is direct, reinsurance issued, or reinsurance held. The ELR would encompass expected future losses and expected future loss adjustment expenses. The ELR would reflect the time value of money, in accordance with IFRS 17, but it would not include the risk adjustment.

Sections 8.3 and 8.4 separately address expected future losses and expected future loss adjustment expenses.

Many evaluation methods may be used to derive the ELRs for MCT, depending on the complexity of the business segments and characteristics of the entity. For example, the projected ELRs may be based on the actuary's valuation of LIC, on the entity's plan (or budget), on the results of a ratemaking analysis, or on an ad hoc analysis, as considered appropriate.

The determination of ELRs for MCT is generally undertaken using a business segmentation that is consistent with the analysis of LIC, or whatever analysis is used as the basis for determining the ELR. To facilitate the MCT calculations, the actuary may use a business segmentation that produces estimated future costs that can be aggregated to the annual return class of insurance level.

8.3. Expected losses

Generally, future expected losses are based on the actuary's evaluation of the entity's recent experience, consistent with the valuation of LIC, adjusted to the remaining coverage period. Section 4.3 provides examples of adjustments to historical experience that may apply.

The actuary would consider the revenue recognition pattern underlying the LRC and select assumptions accordingly. Seasonality adjustments to the indicated future expected losses may need to be applied if the claims occurrence pattern is not uniform throughout the remaining coverage period (e.g., seasonal occurrences of hurricanes). Depending on the line of business, the seasonality adjustment may not be significant. For some portfolios (e.g., property catastrophe treaty reinsurance), however, seasonality may be a meaningful consideration.

The future expected losses may also include adjustment for policy term assumptions considering the term of the policy and the future period covered by the remaining coverage period. For example, for policies with a term longer than 12 months (such as warranties or multi-year contracts, if eligible for PAA), assumptions for the ELR would consider trends that are expected over the remaining term of these policies.

8.4. Loss adjustment expenses and other directly attributable costs

In selecting an ELR, the actuary would consider loss adjustment expenses directly attributable to claims.

If historical losses include allocated loss adjustment expenses (ALAE), the actuary may choose to include ALAE in the estimate of the expected future losses. Alternatively, an estimate of future ALAE may be derived by the actuary based on considerations similar to those applied to the estimate of expected losses, and generally consistent with the actuary's valuation of LIC.

Similarly, the actuary may choose to include unallocated loss adjustment expenses (ULAE) in the estimate of expected future losses. If ULAE is not included with losses, the actuary would derive an estimate of future ULAE on a suitable basis, and generally consistent with the actuary's valuation of LIC. A typical calculation is to apply a ULAE ratio based on historical experience reflecting any expected changes in claims practices to the expected losses. To facilitate the MCT calculations, the actuary may wish to consider the extent to which ALAE ratios and ULAE ratios might vary by annual return class of insurance.

Directly attributable costs not otherwise included as ALAE or ULAE above may be included in the derivation of the ELR for MCT purposes. If not encompassed by the ELR, such costs would be identified as additional costs to be added for MCT purposes.

Appendix 1 – Premium received

One of the main components of LRC under PAA is premium received, which can be derived as total expected premium receipts[14] less premiums receivable for the group of contracts. These balances are currently available under IFRS 4, however they may not be available at the appropriate level of granularity.

While the total expected premium receipts are usually available at the required granularity, actual cash flows for premiums received (or changes in premium receivable) can be operationally complex to obtain for many entities, as most financial reporting systems are not connected to billing and other systems processing actual cash transactions; in addition, cash transactions may be booked to financial data at a higher level of aggregation than groups of contracts.

If the entity is not able to track the actual premiums received (or premium receivable balances) at the required level of granularity without undue cost or effort, actuarial insight may be required to estimate these amounts. The use of allocations is specifically permitted under IFRS 17.24. The actuary may want to confirm with their finance counterparts and auditors that allocations are a suitable alternative.

There are a number of ways the actuary can allocate premiums received, that are booked at a higher level of aggregation, to the group of contracts. Possible approaches include, but are not limited to, the following:

- When the policy system and billing system are connected, it may be possible to obtain the amounts needed to derive the premium received at the required level of granularity. In this case, the actuary may need to work with their IT team to create a daily or monthly automated system feed to the financial data.
- In other systems, the premium received (or changes in premiums receivable) at the required granularity can be obtained; however, due to system limitations, the data may only be available outside of the reporting cycle. One solution could be to estimate the expected premium received amounts for each month, then in the next month this amount could be reversed and the actual cash flow could be booked, reflecting the difference between the estimated and actual premiums receipt for the prior period. In these calculations, consideration would need to be given to seasonally written policies, changes in mix of business, and other items impacting the premium receipts.
- In some cases, the billing systems do not have the necessary detail or are outsourced to brokers or other agencies. The total premiums receipts may be booked at a high level, and it may be challenging to allocate these to the required level of granularity.

  One alternative is to obtain information from the policy system instead of the billing system. In most policy systems, when the new or renewal policy is processed, the payment schedule associated with the premium is also recorded. An extraction of premiums due information may be used as a basis of an allocation, however this may not account for premium due but unpaid and premium paid in advance.

[14] Total expected premium receipts are commonly referred to as “written premiums” under IFRS 4.

Where premium due but unpaid and premium paid in advance are available at the required level of detail, premium received could be derived directly by adjusting premiums due by these amounts.

Assumptions used for allocations would need to be updated periodically to account for changes in mix of business, payment behaviour, and other factors.