



**Canadian
Institute
of Actuaries**

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des actuaires**

EDUCATIONAL NOTE

Life Insurance Capital Adequacy Test (LICAT) and Capital Adequacy Requirements for Life and Health Insurance (CARLI)

May 2023

Life Insurance Capital Adequacy Test (LICAT) and Capital Adequacy Requirements for Life and Health Insurance (CARLI)

Working Group to Update the Educational Note on LICAT and CARLI

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Document 223095

Ce document est disponible en français

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Preamble

In March 2018, the Canadian Institute of Actuaries (CIA) published an educational note on the Life Insurance Capital Adequacy Test (LICAT) Guideline issued by the Office of the Superintendent of Financial Institutions (OSFI) and the Capital Adequacy Requirements for Life and Health Insurance (CARLI) Guideline issued by the Autorité des marchés financiers (AMF). This educational note has been updated to reflect the changes to these guidelines effective January 1, 2023, most notably to incorporate IFRS 17 concepts and terminology. The guidance in this educational note applies to LICAT and CARLI returns filed after the date of this memorandum. The previous version of this educational note will be archived.

The following highlights the primary changes from the previous version of this educational note:

- Section 2 deals with the best estimate liabilities, cash flows and assumptions used for capital requirement calculations, and provides examples of how these might differ from the best estimate liabilities, cash flows and assumptions used in the calculation of the insurance contract liabilities reported in the IFRS 17 financial statements.
- Section 3 deals with the treatment of the contractual service margin (CSM), which has been introduced by IFRS 17, in the LICAT return.
- Section 4 has been updated to reflect the fundamental differences between the definition of provisions for adverse deviations (PfADs) under IFRS 4 and the definition of risk adjustment (RA) under IFRS 17. For example, the RA is for non-financial risks only, whereas PfADs included economic provisions. Another noteworthy change is that the RA included in the surplus allowance is net of all reinsurance under the updated LICAT Guideline, whereas PfADs included in the surplus allowance prior to 2023 were net of registered reinsurance only.
- In section 5, the range of options for projecting participating dividend cash flows in the insurance risk capital calculations has been narrowed for consistency with the LICAT Guideline.
- Finally, content related to IFRS 4 concepts that are no longer applicable under IFRS 17, such as promulgated future mortality improvement and tax timing differences reflected in insurance contract liabilities, has been removed.

Process

The creation of this educational note has followed the Actuarial Guidance Council's (AGC)'s 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 educational note has been prepared jointly by the Committee on Risk Management and Capital Requirements (CRMCR) and the Committee on Life Insurance Financial Reporting, and has received approval for distribution by the AGC on May 9, 2023.

Responsibility of the actuary

The actuary should be familiar with relevant educational notes. Educational notes are not binding; rather they are intended to illustrate the application of the standards of practice. A practice that an educational note describes for a situation is not necessarily the only accepted practice for that situation nor is it necessarily accepted practice for a different situation. Responsibility for ensuring that work is in accordance with accepted actuarial practice lies with the actuary. As accepted actuarial practice evolves, an educational note may no longer appropriately illustrate the application of standards. To assist the actuary, the CIA website contains a reference of pending changes to educational notes.

Your feedback

Questions or comments regarding this educational note may be directed to the [Chair of the CRMCR](#).

1. Introduction

This educational note provides guidance to actuaries preparing the Life Insurance Capital Adequacy Test (LICAT) return for the Office of the Superintendent of Financial Institutions (OSFI) or Capital Adequacy Requirements for Life and Health Insurance (CARLI) return for the Autorité des marchés financiers (AMF). These guidelines for capital standards became effective January 1, 2018, and were amended effective January 1, 2023, to reflect the adoption of IFRS 17 as the public financial reporting and regulatory reporting standard for insurance contracts in Canada. References to LICAT in this educational note would be interpreted as encompassing CARLI unless otherwise stated.

The objective of this educational note is to narrow the range of practice in the application of the LICAT Guideline in certain areas where actuarial judgment may be required.

Some of the topics in this educational note makes reference to the valuation of insurance contract liabilities. Where this term is mentioned, it refers only to the public and regulatory financial statements. The guidance provided in this educational note is only for the purpose of preparing the LICAT return.

The LICAT Guideline defines two ratios: the Total Ratio, which focuses on policyholder and creditor protection, and the Core Ratio, which focuses on financial strength. The Total Ratio is defined as:

$$\frac{\text{Available Capital} + \text{Surplus Allowance} + \text{Eligible Deposits}}{\text{Base Solvency Buffer}}$$

The following topics related to the components of the LICAT ratios are covered in this educational note:

- General: Best estimate liabilities, cash flows and assumptions
- Available capital: Contractual service margin (CSM)
- Surplus allowance: Risk adjustment (RA)
- Base solvency buffer:
 - Participating policyholder dividend cash flows
 - Future credited rates on universal life policies
 - Participating credit
 - Adjustable credit

2. General: Best estimate liabilities, cash flows and assumptions

Section 1.4.4 of the LICAT Guideline defines the best estimate assumptions used to calculate the capital requirements for insurance and market risks.

The definition of the best estimate liability varies depending on the IFRS 17 measurement model used. Generally, the best estimate liability is the reported insurance contract liability minus the sum of the RA

and the CSM. However, under the premium allocation approach (PAA), the best estimate liability is equal to the reported liability for remaining coverage.¹

In general, best estimate assumptions for LICAT purposes would be the same as those used in the valuation of insurance contract liabilities. In some cases, adjustments to best estimate cash flows may be required, such as

- the removal of future new business expected to be written within the contract boundary, as per Section 1.1.5 of the LICAT Guideline,
- adjustments to the participating policyholder dividend cash flows as outlined in Section 5.1 of this educational note, and
- the removal of the provisions for the risk of reinsurer non-performance.

3. Available capital: Contractual service margin

Section 2.1.1 of the LICAT Guideline states that gross tier 1 available capital includes adjusted retained earnings, which in turn includes an adjustment for CSMs. The CSMs that are reported as liabilities in the financial statements are added to tier 1 capital, and the CSMs that are reported as assets in the financial statements are subtracted from tier 1 capital. In adjusting retained earnings, CSMs related to segregated fund guarantee products are excluded.

4. Surplus allowance: Risk adjustment for non-financial risks

Section 1.1.3 of the LICAT Guideline indicates that the surplus allowance is equal to the RA:

- reported in the financial statements,
- in respect of all insurance contracts other than RAs arising from segregated fund contracts with guarantee risks,
- for non-financial risks,
- net of all reinsurance.

4.1. Risk adjustment reported in the financial statements

IFRS 17 does not prescribe the methodology for calculating the RA to be included in the insurance contract liabilities. The CIA educational note [*IFRS 17 Risk Adjustment for Non-Financial Risk for Life and Health Insurance Contracts*](#) provides background information to help inform Canadian actuaries when exercising judgment in applying one or more of the available methodologies. Whichever method is reflected in the entity's regulatory return would be used in completing the LICAT return.

Under IFRS 17, the RA is not explicitly reported on the statement of financial position but is readily available from other disclosures, such as the liability roll forward schedules, that split the insurance contract liabilities by component. The disclosures split the insurance contract liabilities between the liability for remaining coverage and the liability for incurred claims, both of which may include a RA component eligible for inclusion in the surplus allowance.

¹ Under the PAA, any disabled life reserve reported in the liability for incurred claims would still be included in the liability cash flows used to calculate the base solvency buffer. As per Section 6.1 of the LICAT Guideline, cash flows for incurred claims are projected to the last payment date.

If an entity uses the PAA for a block of business, the liability for incurred claims would include a RA that would be explicitly reported in the financial statements and therefore included in the surplus allowance. The liability for remaining coverage might also include an implicit RA that would not be included in the surplus allowance.

The RA included in the insurance contract liabilities is a before-tax item. Accordingly, the RA included in the surplus allowance would be quantified on a before-tax basis. That is, the RA would not be reduced by the amount of tax that would be paid if the RA were released into profit.

4.2. Risk adjustment in respect of insurance contracts

Only the RA associated with insurance contract liabilities (other than segregated fund contracts with guarantee risks) is eligible for inclusion in the surplus allowance. Provisions related to the following are not included in the surplus allowance.²

- investment contracts, which are accounted for under IFRS 9, and
- administrative services only contracts, which are accounted for under IFRS 15.

4.3. Risk adjustment for non-financial risks

IFRS 17.B86-B92 emphasize that the RA would consider only non-financial risks. Insurance risk, lapse risk and expense risk are listed as examples of elements that would be included, whereas operational risks, market risks and credit risks are excluded.

Other than the exclusions noted in Section 4.2 of this educational note, risks that are included in the RA reported in the financial statements would be included in the surplus allowance. Risks that are excluded from the RA would also be excluded from the surplus allowance.

4.4. Risk adjustment for reinsurance contracts held

The RA included in the surplus allowance is determined net of both registered and unregistered reinsurance. Any RA included in reinsurance contract held assets and liabilities would be excluded from the RA that is reflected in the surplus allowance.

5. Base solvency buffer: Participating policyholder dividend cash flows

5.1. Interest rate risk component

Section 5.1.3.3 of the LICAT Guideline outlines adjustments to be made to the policyholder dividend cash flows projected in the valuation of insurance contract liabilities for use in LICAT. The goal of these adjustments is to set the net present value of assets over liabilities under the initial scenario equal to the participating block surplus.

In making these adjustments, the following considerations apply:

- Level adjustments – the use of level adjustments is a practical simplification that avoids the need to reproject dividend cash flows under the initial scenario. Section 5.1.3.3 of the LICAT Guideline says that the level adjustment is made to the *dividend scale*, as opposed to the projected dividend cash flows.

² Likewise, as per chapter 6 of the LICAT Guideline, investment contracts and administrative services only contracts, where an insurer bears no risk and has no liability for claims, are excluded from the base solvency buffer insurance risk requirement.

- Dividend options – in making a level adjustment to the dividend cash flows, second order impacts of policyholder dividend options (e.g., reduced dividends lead to reduced paid-up additions which lead to reduced dividends) may be excluded as an approximation, as per Section 1.4.5 of the LICAT Guideline.
- RAs – while Section 5.1.3.2 of the LICAT Guideline indicates that liability cash flows would incorporate all RAs, this does not mean that projected policyholder dividend cash flows would be reduced to pass through the experience assuming the assumptions underlying the RA are realized.

5.2. Insurance risk components

For insurance risk components, the projected policyholder dividend cash flows would be those used in the financial statement valuation as opposed to those used in the interest rate risk component (described above).

6. Base solvency buffer: Future credited rates on universal life policies

Section 5.1.3.22 of the LICAT Guideline provides guidance on the projection of cash flows for universal life (UL) business when determining the required capital component for interest rate risk. Cash flows for premiums, policy charges, policy benefits, and expenses require a projection of the investment (policyholder) account underlying the contract, which requires a projection of future credited rates on the investment account.

A key principle in the projection of credited rates is that the determination of the credited rate in the initial and stress scenarios would follow the same methodology that is used for the valuation of financial statement liabilities, including the reflection of minimum guarantees.

In projecting credited rates for LICAT purposes, returns on non-fixed income assets and reinvestments of fixed income assets would follow the rates in the LICAT scenario being tested in order to maintain the same relationship as exists between actual credited rates and the discount rates for financial statement valuation purposes. The only difference between the credited rates for financial statement valuation purposes and the credited rates in the LICAT initial and stress scenarios would be the impact of differences in returns that are used to determine the credited rate. The following examples illustrate this principle:

- If the credited rate used in the financial statement valuation of an investment account with a five-year interest guarantee period is determined as the implied forward rate at that period of time minus 50 basis points, then this same approach would be used with the LICAT initial and stress interest rate scenario projections.

For example, if the five-year forward rate used for financial statement valuation purposes is 4.0% at time 3 versus 3.25% in the LICAT initial scenario, the credited rate used for financial statement valuation purposes would be 3.5% (4% minus 50 basis points) and the credited rate under the LICAT initial scenario would be 2.75% (3.25% minus 50 basis points). If there was a minimum credited rate guarantee of 3%, the credited rate under the LICAT initial scenario would be 3%.

- For products using a portfolio average return to determine the credited rate, the returns on non-fixed income assets and reinvestment assumptions for fixed-income assets in the portfolio average return of the financial statement liabilities would be replaced with the rates in the LICAT scenario being tested to restate the credited rate. The earned rates of in force fixed income assets are not affected by the LICAT scenario.

In the interest rate risk calculation, only the assets on the statement of financial position are included in the projected net cash flow, and in particular, no reinvestment is assumed in the asset cash flows. However, as discussed above, reinvestments may be required to project the balance in the investment account, and so the cash flows associated with the investment account can extend beyond the cash flows of the supporting assets. The cash flows used to determine the required capital for interest rate risk would be internally consistent. For example, assuming the death benefit is equal to \$100,000 plus the investment account value of \$50,000, for the interest rate risk net cash flow projection, two approaches are possible:

- i. Net cash flow includes a liability cash flow on death of \$150,000 and an offsetting asset cash flow of -\$50,000 for the release of the investment account value.
- ii. Net cash flow includes a liability cash flow on death of \$100,000, with no release of investment account value in the asset cash flows.

7. Base solvency buffer: Participating credit

Section 9.1.2 of the LICAT Guideline covers the participating credit for qualifying blocks of participating business. The participating credit is used to reduce the required capital components for the block up to defined limits.

The participating credit would not be used to reduce the required capital component associated with risks, or portions of risks, that are not passed through to policyholders. For example, sometimes expense experience is not shared.

8. Base solvency buffer: Adjustable credit

Section 9.2.1 of the LICAT Guideline outlines the criteria used to determine whether a product qualifies for the adjustable credit. Criterion 4 indicates the product is required to have sufficient flexibility to recuperate at least half of any unexpected insurance risk losses.

Criterion 4 could be applied in aggregate, using all sources of flexibility and testing against all sources of insurance risk. If so, the actuary would exclude any sources of flexibility that are directly reflected in the required capital component to avoid double counting the benefit of flexibility. If the criterion is satisfied, the aggregate measure of flexibility can be used as adjustable credit, but it can be used only to reduce required capital components for insurance risk.

Alternatively, criterion 4 can be restricted to the particular insurance risks that are passed through to policyholders. For example, if only mortality risk is passed through to policyholders, the criterion would test the amount of pass-through room against the unexpected mortality risk losses. In this case, the adjustable credit would be used only to reduce the mortality component of required capital.



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