Educational Note

IFRS 17 – Coverage Units for Life and Health Insurance Contracts

Committee on Life Insurance Financial Reporting

December 2022

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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.

MEMORANDUM

To: Members in the life insurance area

From: Dean Newell, Chair and Steven W. Easson, Immediate Past Chair
Actuarial Guidance Council

Steve Bocking, Chair and Marie-Andrée Boucher, Immediate Past Chair
Committee on Life Insurance Financial Reporting

Date: December 18, 2022

Subject: **Educational Note: IFRS 17 Coverage Units for Life and Health Insurance Contracts**

The Committee on Life Insurance Financial Reporting (CLIFR) has prepared this educational note to provide guidance on the selection of coverage units for the purpose of amortizing the contractual service margin for insurance contracts within the scope of the International Financial Reporting Standard (IFRS) 17.

This educational note is structured into four sections. Section 1 introduces the purpose of this educational note. Section 2 introduces the concept of coverage units and provides general considerations with respect to different aspects related to coverage units. Section 3 discusses considerations in the choice of coverage units for typical Canadian insurance product types, namely individual life insurance, annuities, accident and sickness, segregated funds and group insurance. The final section focuses on the principles for establishing coverage units for groups of contracts that combine more than one type of coverage.

A preliminary version of the draft of this educational note was shared with the following committees:

- Property & Casualty Insurance Financial Reporting Committee (PCFRC)
- Committee on Risk Management and Capital Requirements (CRMCR)
- Committee on the Appointed/Valuation Actuary (AA)
- International Insurance Accounting Committee (IIAC)
- Committee on Workers' Compensation (CWC)

A preliminary version of the draft of this educational note was also shared with the staff of the Accounting Standards Board (AcSB) to broaden consultations with the accounting community. Given that this 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 draft of this educational note was also presented several times at the Actuarial Guidance Council (AGC) in the months preceding this request for approval. CLIFR satisfied itself that it had sufficiently addressed the comments received on the draft of this educational note and it was published in December 2019.

The following highlights the changes between this educational note and the draft published version:

- The draft version of this educational note was published prior to the IFRS 17 Standard being finalized. Significant updates were made to the guidance provided in this educational note to reflect the final version of the Standard.
- The annuities section was rewritten in the context of the most recent decision rendered by the IFRS Interpretations Committee (IFRIC) on the transfer of insurance coverage under a group of annuity contracts. The Accident and Sickness and Segregated Fund sections were also reviewed and edited to address potential implications of the decision rendered by the IFRIC on benefits paid in the form of installments.
- Refreshed references to IFRS 17 materials published or edited since December 2019, including other CIA educational notes and reports, and the final version of the Application of IFRS 17 Insurance Contracts educational note (published in October 2021).
- Other edits for increased clarity and grammar.

The only substantial changes made in the final version of this educational note, relative to the draft published version, were a direct consequence of the aforementioned IFRIC decision. Therefore, the final version of this educational note was subject to only a limited review by other CIA committees.

The creation of this memorandum and 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 educational note has been prepared by CLIFR and has received approval for distribution from the AGC on December 13, 2022.

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.

CLIFR would like to acknowledge the contribution of its subcommittee that assisted in the development of this educational note: Marie-Andrée Boucher (Chair), Stéphanie Beaulne, Yannick Laurence Bourassa, Paula Kwiatkowska, Sylvain Lefebvre, Ping-Teng Lin, David Littleton, Samuel Nadeau, Christopher Piper, Andrew Ryan, Joe Smadella, Mary Stock, Catherine Sun and Maxime Turgeon-Rhéaume.

Questions or comments regarding this educational note may be directed to the Chairs of CLIFR and this subcommittee (noted above) at guidance.feedback@cia-ica.ca.

DN, SWE, SB, MAB

Table of Contents

1. Introduction

IFRS 17 establishes principles for the recognition, measurement, presentation, and disclosure of insurance contracts.

IFRS 17 introduces the concept of contractual service margin (CSM) as the mechanism by which unearned profit is deferred and amortized over the period in which services are provided for a group of insurance contracts. Amortization of CSM in a given period is based on the proportion of services provided in that period relative to services provided over the entire service period. To this end, the concept of coverage units, which represents the quantity of service provided by each contract in the group, is created.

This educational note provides guidance on the selection of coverage units for insurance contracts within the scope of IFRS 17, for products that are typically sold in Canada.

The guiding principles that the CLIFR Subcommittee followed in writing this note were the following:

- First and foremost, consider Canadian-specific perspectives, rather than simply repeating international actuarial guidance.
- Provide application guidance that is consistent with the IFRS 17 standard and applicable Canadian actuarial standards of practice and educational notes, without unnecessarily narrowing the policy choices available in the IFRS 17 standard.
- Consider practical implications associated with implementation of potential methods; in particular, ensure that due consideration is given to options that do not require undue cost and effort to implement by recognizing that data availability and materiality would be considerations in the selection of coverage units.
- Recognize that the selection of coverage units requires the use of judgment.

Chapter 6 of the educational note *Application of IFRS 17 Insurance Contracts* provides further general guidance on coverage units. This educational note, published in October 2021, is an adoption of the International Actuarial Note (IAN) 100, which is accompanied by a preamble. The preamble outlines a number of additional clarifications on the topics discussed in the IAN 100 that CIA members should be aware of.

This educational note includes some references to decisions rendered by the IFRS Interpretations Committee (IFRIC). The IFRIC is the interpretative body of the International Accounting Standards Board (IASB). The IFRIC works with the IASB in supporting the consistent application of IFRS Accounting Standards. The IFRIC responds to questions about the application of the accounting standards and does other work at the request of the IASB. The IASB Staff prepares the agenda papers that are discussed within the IFRIC meetings.

This educational note also includes some references to principles articulated by the IASB Transition Resource Group (TRG) and to staff papers prepared for the TRG meetings. Note that the TRG is not a governing body and the staff papers are not binding. The role of the TRG is to communicate with the IASB on the practical issues associated with the implementation of the Standard.

2. General considerations

2.1. Insurance contract services

Under IFRS 17.B119, a portion of the CSM is recognized as profit each period "to reflect the insurance contract services provided under the group of insurance contracts in that period".

Insurance contract services are defined in Appendix A of the IFRS 17 Standard as:

> (a) coverage for an insured event (insurance coverage);
>
> (b) for insurance contracts without direct participation features, the generation of an investment return for the policyholder, if applicable (investment-return service); and
>
> (c) for insurance contracts with direct participation features, the management of underlying items on behalf of the policyholder (investment-related service).

Regarding investment-return services, IFRS 17.B119B states that *"*insurance contracts without direct participation features may provide an investment-return service if, and only if:

> (a) an investment component exists, or the policyholder has a right to withdraw an amount;
>
> (b) the entity expects the investment component or amount the policyholder has a right to withdraw to include an investment return (an investment return could be below zero, for example, in a negative interest rate environment); and
>
> *(c)* the entity expects to perform investment activity to generate that investment return*."*

Investment component is defined in IFRS 17 Appendix A 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*.*"

An assessment of whether insurance contract services are, or are not, provided in a particular period is the first step in developing the coverage units for a group of contracts. That assessment would be made based on the facts and circumstances of the product, with reference to the definitions above. General guidance is provided in Section 3 of this educational note.

In assessing the facts and circumstances affecting the decision about whether investment-return services are provided, internal consistency in the application of IFRS 17 would be considered. One of the criteria for an investment-return service to exist is that the entity expects to perform investment activity to generate an investment return [IFRS 17.B119B(c)]. If investment expenses are classified as directly attributable to a group of contracts per IFRS 17.B65(ka), it may be consistent to conclude that criterion IFRS 17.B119B(c) would be met. However, if investment expenses are not considered directly attributable, it may be more difficult to conclude that there is an investment-return service being provided as criterion IFRS 17.B119B(c) would not be met.

Once it is established whether services are provided based on the facts and circumstances of the group of contracts, the actuary would use judgment to derive a coverage unit basis that is a

reasonably proxy for the insurance contract services provided by the group of contracts. Considerations for doing so are discussed in the next section.

2.2. Definition of coverage units

Coverage units are a representation of the insurance contract services provided, and the means to determine the portion of the CSM to be amortized into insurance revenue. Under IFRS 17.B119(a), 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 benefits provided under a contract and its expected coverage period."

As such, the key considerations in the definition of coverage units are "quantity of insurance contract services" and "expected coverage period". Services would include both insurance coverage and, in some circumstances, investment-return service or investment-related service. The IASB acknowledges that significant judgment will be required in determining a single quantity of service measure, and as such requires disclosure [IFRS 17.117(c)(v)] of the approach used to determine the relative weighting of the benefits provided by insurance coverage and investment-return or investment-related service.

A general method that would work for most Canadian products is a dual factor approach. Coverage units would be defined as (1) a volume weighting (reflecting the IFRS 17.B119(a) requirement to consider the quantity of services provided under the contract), and (2) expected survivorship of the given contract (reflecting the IFRS 17.B119(a) requirement to consider expected coverage period). The combination of the dual factors would facilitate aggregation amongst contracts with different quantity of services and different coverage periods.

$$CU_t = (Quantity\ of\ Services)_t * (\ {}_tp_x)$$

Where ${}_tp_x$ represents the survivorship factor to the beginning of reporting period t.

The quantity of services component would reflect both insurance coverage and investment-return or investment-related services, if it is assessed that investment-return or investment-related services are provided under the contract.

$$CU_t = [(Insurance\ Coverage)_t + (Investment\ Return\ or\ Investment\ Related\ Service)_t] * (\ {}_tp_x)$$

Supplemental discussion on the selection of coverage units is provided in IFRS 17 Basis for Conclusions paragraphs BC279–283. These paragraphs articulate the following key principles underlying selection of coverage units:

- Quantity of services would generally not be based on expected cash flows or release of the risk adjustment for non-financial risk.
- It is optional (based on judgment) to use discounting in the allocation of the CSM to coverage units provided in the period and coverage units provided in future periods. If discounting is used, the selection of discount rates for that purpose would be based on judgment, as the Standard 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.

Except for this discussion, 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.

Specifically, the TRG made the following observations (most of them are listed under Question 6.14 of the *Application of IFRS 17 Insurance Contracts* educational note):

- Lapse expectations are included to the extent they affect expected duration of coverage (coverage period).
- The different levels of service across periods need to be reflected in selection of coverage units. They would consider the quantity of benefits provided, not the costs of providing those benefits.
- The quantity of benefits provided is assessed from the policyholder perspective rather than the quantity of benefits expected to be incurred by the insurer.
- A policyholder benefits from the insurer standing ready to meet valid claims, hence the quantity of benefits relates to amounts that could potentially be claimed.
- Different probabilities of insured events across periods do not of themselves affect the stand-ready quantity of benefits provided to a policyholder, but where there are different types of insured events, their different probabilities might affect the stand-ready benefit provided by the insurer. For example, within a life insurance policy with a level face amount, the increasing probability of death as the policyholder ages would not affect the level of the insurance contract services over time. However, when a contract combines two different types of coverages, different relative probabilities of the insured events may affect the choice of coverage units for the contract as a whole; this combination of coverages situation is addressed in Section 4 of this educational note.
- Particular methods are not specified by IFRS 17 and different methods may achieve the objective of reflecting the service provided in each period.
- The allocation of the CSM would reflect the service rendered in a period. The determination of coverage units that achieve this objective is not an accounting policy choice but involves judgment and estimates that would be determined systematically and rationally.
- Any method achieving the objective of reflecting the insurance contract services provided in each period is appropriate (e.g., maximum amount or amount expected to be claimed in each period).
- Premiums or expected cash flows would not be a good basis for coverage units, unless they can be demonstrated to be a reasonable proxy for the services provided in the period (such as the group insurance example noted in approach 3 of Section 4).

2.3. Practical considerations

A practical reality is that any chosen approach would preferably be operationally efficient, perhaps making use of readily available information and valuation system functionality. Furthermore, it would be helpful if the approach was intuitive, as less complex methods might be easier to explain and justify in meeting the above requirements.

Future coverage units would generally be projected consistently with the fulfilment cash flows, although in certain circumstances it might be reasonable to make simplifying assumptions in the projection of future coverage units. Simplifications in the projection of coverage units are acceptable, provided that the requirements of IFRS 17.B119 are met and that the principles articulated in BC279–283 are considered.

2.4. CSM amortization

Coverage units would be based on the services to be provided over the expected coverage period, which represents the probability-weighted average coverage period of the contract. The expected coverage period is reassessed each period.

To determine the proportion of CSM to be amortized for provision of service during the period *i*, under this approach the following formula would be used:

$$\frac{CU_i}{\sum_{t=\,i}^{T} CU_t v^{(t-i)}}$$

Where v is the discount factor. Note that discounting need not be applied in the denominator (per IFRS 17.BC282.)

2.5. General illustrative examples

As an illustrative example, consider a contract that provides level insurance coverage of $1,000 over a 10-year period, with an initial CSM of $100. There are assumed decrements of 5% per year, and no investment-return service is provided. In this simplified example, the interest rate used to discount the coverage units and the interest used to accrete the CSM are zero. The resulting coverage units and amortization of the CSM could be calculated as follows:

Period	1	2	3	4	5	6	7	8	9	10	Total
Coverage	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
Probability of Survival ($_tp_x$)	100.0%	95.0%	90.3%	85.7%	81.5%	77.4%	73.5%	69.8%	66.3%	63.0%	
(A) Current service (CU_t)	1,000	950	903	857	815	774	735	698	663	630	
(B) Current + future service	8,025	7,025	6,075	5,173	4,315	3,501	2,727	1,992	1,294	630	
CSM amortization factor [(A)/(B)]	12.5%	13.5%	14.9%	16.6%	18.9%	22.1%	27.0%	35.1%	51.3%	100.0%	
Opening CSM	100.0	87.5	75.7	64.5	53.8	43.6	34.0	24.8	16.1	7.9	
Insurance finance expense (C)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CSM amortized (D)	12.5	11.8	11.2	10.7	10.1	9.6	9.2	8.7	8.3	7.9	100.0
Ending CSM	87.5	75.7	64.5	53.8	43.6	34.0	24.8	16.1	7.9	0.0	
Profit Realized [(D)-(C)]	12.5	11.8	11.2	10.7	10.1	9.6	9.2	8.7	8.3	7.9	100.0

The above example is a simplification intended to illustrate the practical application of the general formulas in Sections 2.2 and 2.4 above. The coverage units in any period (CU_t) are defined as the product of the quantity of services and the probability of survival of the contract. The CSM amortization factor in any given period is the ratio of current service in the period to the sum of current and future service in all subsequent periods.

In practice, the CSM will be accreted at a discount rate that is locked-in when the group of contracts is issued. Assume that the locked-in discount rate is 3%, and everything else in the example is the same. The definition of coverage units and calculation of the CSM amortization factor would be identical to the example above, but the amortization of the CSM would differ as follows due to accretion of interest on the CSM:

Period	1	2	3	4	5	6	7	8	9	10	Total
Coverage	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
Probability of Survival ($_tp_x$)	100.0%	95.0%	90.3%	85.7%	81.5%	77.4%	73.5%	69.8%	66.3%	63.0%	
(A) Current service (CU_t)	1,000	950	903	857	815	774	735	698	663	630	
(B) Current + future service	8,025	7,025	6,075	5,173	4,315	3,501	2,727	1,992	1,294	630	
CSM amortization factor [(A)/(B)]	12.5%	13.5%	14.9%	16.6%	18.9%	22.1%	27.0%	35.1%	51.3%	100.0%	
Opening CSM	100.0	90.2	80.3	70.4	60.5	50.6	40.6	30.5	20.4	10.2	
CSM With Interest Accretion	103.0	92.9	82.7	72.5	62.3	52.1	41.8	31.4	21.0	10.6	
Insurance finance expense (C)	3.0	2.7	2.4	2.1	1.8	1.5	1.2	0.9	0.6	0.3	16.6
CSM amortized (D)	12.8	12.6	12.3	12.0	11.8	11.5	11.3	11.0	10.8	10.6	116.6
Ending CSM	90.2	80.3	70.4	60.5	50.6	40.6	30.5	20.4	10.2	0.0	
Profit Realized [(D)-(C)]	9.8	9.9	9.9	9.9	10.0	10.0	10.0	10.1	10.2	10.2	100.0

As noted in Section 2.2, discounting of the coverage units for future service would be an acceptable option under IFRS 17. Assuming the locked-in discount rate is used for this purpose, the above example would be modified as follows.

Period	1	2	3	4	5	6	7	8	9	10	Total
Coverage	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
Probability of Survival ($_tp_x$)	100.0%	95.0%	90.3%	85.7%	81.5%	77.4%	73.5%	69.8%	66.3%	63.0%	
Discount Factor	100.0%	97.1%	94.3%	91.5%	88.8%	86.3%	83.7%	81.3%	78.9%	76.6%	
(A) Current service (CU_t)	1,000	922	851	785	724	667	616	568	524	483	
(B) Current + future service	7,139	6,139	5,217	4,366	3,581	2,858	2,190	1,575	1,007	483	
CSM amortization factor [(A)/(B)]	14.0%	15.0%	16.3%	18.0%	20.2%	23.4%	28.1%	36.1%	52.0%	100.0%	
Opening CSM	100.0	88.6	77.5	66.8	56.5	46.4	36.6	27.1	17.9	8.8	
CSM With Interest Accretion	103.0	91.2	79.8	68.8	58.2	47.8	37.7	27.9	18.4	9.1	
Insurance finance expense (C)	3.0	2.7	2.3	2.0	1.7	1.4	1.1	0.8	0.5	0.3	15.8
CSM amortized (D)	14.4	13.7	13.0	12.4	11.8	11.2	10.6	10.1	9.6	9.1	115.8
Ending CSM	88.6	77.5	66.8	56.5	46.4	36.6	27.1	17.9	8.8	0.0	
Profit Realized [(D)-(C)]	11.4	11.0	10.7	10.4	10.1	9.8	9.5	9.3	9.0	8.8	100.0

Note that the key difference in this example is the addition of a discounting factor to the coverage units for future service. The discounting factor reduces the relative weight of future service and results in a slightly more accelerated release of the CSM.

In practice, modifications to this general approach could be made to accommodate specific product features, provided that the resulting coverage units reasonably reflect the insurance contract services being provided.

In each of the above general examples, the coverage is assumed to be a flat $1,000 per period. In practice, the definition of coverage will vary by product type. Section 3 of this educational note provides examples of the definition of coverage units for products typically sold in Canada.

2.6. Reinsurance contracts held

This document addresses coverage units for insurance contracts issued. The considerations in the selection of coverage units for reinsurance contracts held would follow similar logic, taking into account the risks ceded to the reinsurer. However, as per IFRS 17.66(e), the coverage units would be based on services received (rather than services provided).

2.7. Summary: general principles

Due to the breadth of benefit designs, and to the fact that the IFRS 17 Standard does not specify particular coverage unit constructs, judgment is applied in selecting coverage units that reflect the insurance contract services provided. The following principles would be considered:

- Coverage units would reflect insurance contract services provided in each period. Insurance contract services include both insurance coverage and investment-return services (or investment-related services for contracts with direct participation features), if applicable.
- Section 3 of this educational note builds upon the general coverage unit formula outlined in Section 2.2 and suggests potential coverage unit choices for typical Canadian products, but other choices are possible if they are a reasonable representation of the insurance contract services provided for the group of contracts.
- Coverage units would be consistent across products. For example, discounting of coverage units (or not) would be applied consistently across similar products, and coverage units for groups of newly issued contracts would be consistent with coverage units for groups of similar contracts in force. Moreover, the selection of coverage units would not be changed in the future for a particular group of contracts without also being changed for groups of similar contracts. In Section 3 of this educational note, the examples are deliberately similar, and even somewhat repetitive, to illustrate consistency of application of the general formula in Section 2.2 to various products.
- The resulting CSM amortization pattern is a faithful representation of the insurance contract services provided.

The mechanics of CSM interest accretion, changes in fulfilment cash flows relating to future service, and considerations related to the treatment of experience adjustments are out of scope for this educational note. Nevertheless, considering the above principles in the selection of coverage units, the resulting amortization of the CSM would have the following general characteristics:

- To the extent that insurance contract services are provided in a reporting period, there would be an amortization of CSM in that period. An approach that would result in the CSM being fully amortized before all insurance contract services are provided would not be appropriate.
- The percentage of the CSM amortized in any period is the proportion of the insurance contract services provided in that period relative to the insurance contract services provided in current and future periods.
- If the expected coverage declines over time (due to expected survivorship or other reasons), then the expected dollar amount of CSM amortization for a group would generally decline over time as well.

The amortization of the CSM is the last step in the calculation of the carrying amount of the CSM at the end of a reporting period.

3. Product types

This section discusses considerations in the choice of coverage units for most Canadian insurance product types. The suggested general approaches outlined in this section would satisfy the requirements of IFRS 17, but other approaches that also satisfy the requirements of IFRS 17 would be acceptable, as the selection of coverage units is based on judgment.

For simplicity, the illustrations in this section do not include the impact of discounting in the allocation of CSM to current and future periods of service. But as noted in the general considerations section, the use of discounting is permitted under IFRS 17.

3.1. Individual life insurance

3.1.1 Traditional non-participating products

Individual life insurance contracts typically provide lump sum payments, payable upon the occurrence of an insured event (i.e., the death of the insured). These contracts may or may not have cash surrender values (CSV).

For contracts without CSV, the insurance coverage would be the full face amount (death benefit) of the contract. The face amount would be representative of the quantity of service since it is not expected that such a contract would provide investment-return services.

For contracts with a CSV, the insurance coverage is the net amount at risk (NAAR), which is defined as the face amount less the CSV. A key decision point is whether or not the CSV represents an investment-return service. If yes, the contract would provide both insurance coverage (represented by the NAAR) and investment-return service (represented by the CSV), and it may be reasonable to use the face amount (sum of NAAR and CSV) as the basis for the coverage units. If the CSV is not considered an investment-return service, the insurance contract services would only include insurance coverage, and the NAAR would be the basis for the coverage units.

The remainder of this section makes the assumption that the CSV does represent an investment-return service, and thus the face amount is illustrated as the quantity of insurance contract services for all traditional life contracts, with or without a CSV.

As mentioned in the introduction, the projection of the coverage units would consider the expected coverage period of the contract. Expected decrements (lapses, deaths) would be considered in the projection of coverage units in future periods.

The general coverage unit choice could therefore be as follows:

$$CU_t = (Face\ Amount)_t * (\ {}_tp_x)$$

As an illustrative example, consider a 10-year non-renewable term product with face amount of $1,000. There are assumed decrements of 5% per year for lapse and mortality. The resulting coverage units and CSM amortization factors would be as follows:

Period	1	2	3	4	5	6	7	8	9	10
Face Amount	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Probability of Survival ($_tp_x$)	100.0%	95.0%	90.3%	85.7%	81.5%	77.4%	73.5%	69.8%	66.3%	63.0%
(A) Current service (CU_t)	1,000	950	903	857	815	774	735	698	663	630
(B) Current + future service	8,025	7,025	6,075	5,173	4,315	3,501	2,727	1,992	1,294	630
CSM amortization factor [(A)/(B)]	12.5%	13.5%	14.9%	16.6%	18.9%	22.1%	27.0%	35.1%	51.3%	100.0%
Opening CSM	100.0	87.5	75.7	64.5	53.8	43.6	34.0	24.8	16.1	7.9
Insurance finance expense	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CSM amortized	12.5	11.8	11.2	10.7	10.1	9.6	9.2	8.7	8.3	7.9
Ending CSM	87.5	75.7	64.5	53.8	43.6	34.0	24.8	16.1	7.9	0.0

Special considerations may be given to products that have a variable face amount. In some instances, the face amount can vary depending on an external index such as the consumer price index. The suggested coverage units would reflect the fact that the face amount is not fixed but may vary in future periods.

Another example of a product with a variable face amount would be one that covers the outstanding balance of a loan up to a certain maximum amount; for example, mortgage insurance where the claim payable is related to principal outstanding. The outstanding balance of the loan would be projected when determining the fulfilment cash flows. The outstanding loan balance used in the fulfilment cash flows would be a reasonable representation of the quantity of service provided under the contract. The maximum amount of the loan defined in the contract could also be an appropriate measure of the quantity of service provided.

3.1.2 Individual participating life insurance

For individual participating life insurance business with underlying items, the policyholders' share of the underlying (i.e., the perfect pass-through portion of the fulfilment cash flows[1]) would be a reasonable measure of the insurance coverage and investment-related (variable fee approach) or investment-return (general measurement approach (GMA)) services provided. Other measures of the quantity of service provided may also be appropriate.

The use of the NAAR, which could represent the insurance coverage, may also be appropriate when used in conjunction with a measure of any investment-return or investment-related services provided by the contract. A key consideration for participating business is how to appropriately represent and weight the insurance coverage against the investment-related or investment-return services. This is an area involving a high degree of professional judgment.

In any case, there would be additional considerations with respect to the projections of coverage units tied to underlying items or face amounts. The potential payment of dividends and related dividend options could have an effect on the projection of these amounts, which could impact the insurance coverage amounts, the investment component amounts, and the investment-related or investment-return services. In theory, the projection of future coverage units should account for the following items:

- additional insurance coverage that could be provided under various dividend options (e.g., term additions, paid-up additions)

[1] excluding amounts owed to future policyholders (IFRS 17.B119A).

- additional investment component amounts (and investment-related or investment-return services) that could result, (e.g., dividends on deposit, policy loans) including those that could be related to additional insurance coverages (e.g., cash surrender values of paid-up additions)

3.1.3 Universal life

The coverage unit considerations under universal life are generally consistent with those in the traditional non-participating products section and, for variable universal life contracts, the individual participating life insurance section.

One common type of universal life is where upon the death of the insured, the beneficiary is paid an amount equal to the sum of the account value (AV) and the face amount (FA) of the contract. In such a case, the coverage unit could be based the amount payable upon death:

$$CU_t = (Face\ Amount + Account\ Value)_t * (\ {}_tp_x)$$

This formula is based on the assumption that the account value is representative of an investment-return service (or an investment-related service if the universal life contracts qualify as contracts with direct participation features), and the face amount is representative of insurance coverage. Alternate interpretations could be possible based on the facts and circumstances of the specific product design.

As an illustrative example, consider a universal life (UL) product with face amount of $1,000, and an initial account value of $200. There are assumed decrements of 5% per year for lapse and mortality. The account value is expected to grow at 5% per year. For ease of illustration, a 100% lapse rate was assumed at the end of the 10th year. The resulting coverage units and CSM amortization factors would be as follows:

Period	1	2	3	4	5	6	7	8	9	10
Face Amount	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Account Value	200	210	221	232	243	255	268	281	295	310
Death benefit	1,200	1,210	1,221	1,232	1,243	1,255	1,268	1,281	1,295	1,310
Probability of Survival ($_tp_x$)	100.0%	95.0%	90.3%	85.7%	81.5%	77.4%	73.5%	69.8%	66.3%	63.0%
(A) Current service (CU_t)	1,200	1,150	1,102	1,056	1,013	971	932	895	859	826
(B) Current + future service	10,003	8,803	7,653	6,552	5,496	4,484	3,512	2,580	1,685	826
CSM amortization factor [(A)/(B)]	12.0%	13.1%	14.4%	16.1%	18.4%	21.7%	26.5%	34.7%	51.0%	100.0%
Opening CSM	100.0	88.0	76.5	65.5	54.9	44.8	35.1	25.8	16.8	8.3
Insurance finance expense	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CSM amortized	12.0	11.5	11.0	10.6	10.1	9.7	9.3	8.9	8.6	8.3
Ending CSM	88.0	76.5	65.5	54.9	44.8	35.1	25.8	16.8	8.3	0.0

Another form of UL product provides a level death benefit amount. Upon the death of the insured, the beneficiary is paid an amount that corresponds to the face amount of the contract, plus any amount of account value exceeding the face amount. The amount of insurance coverage declines as the fund value increases (NAAR = face amount less account value).

Using logic similar to the above, the insurance coverage could be represented by the NAAR, and the investment-return service (or investment-related service, where applicable) could be represented by the account value. In such a case, the coverage unit could be based on the amount payable upon death:

$$CU_t = (Max(Face\ Amount, Account\ Value))_t * (\ {}_tp_x)$$

Following on the previous example, consider a level death benefit UL product with face amount of $1,000, and an initial account value of $200. There are assumed decrements of 5% per year for lapse and mortality. The account value is expected to grow at 5% per year. Again, for ease of illustration, a 100% lapse rate was assumed at the end of the 10th year. The resulting coverage units and CSM amortization factors would be as follows:

Period	1	2	3	4	5	6	7	8	9	10
Face Amount	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Account Value	200	210	221	232	243	255	268	281	295	310
Death benefit	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Probability of Survival ($_tp_x$)	100.0%	95.0%	90.3%	85.7%	81.5%	77.4%	73.5%	69.8%	66.3%	63.0%
(A) Current service (CU_t)	1,000	950	903	857	815	774	735	698	663	630
(B) Current + future service	8,025	7,025	6,075	5,173	4,315	3,501	2,727	1,992	1,294	630
CSM amortization factor [(A)/(B)]	12.5%	13.5%	14.9%	16.6%	18.9%	22.1%	27.0%	35.1%	51.3%	100.0%
Opening CSM	100.0	87.5	75.7	64.5	53.8	43.6	34.0	24.8	16.1	7.9
Insurance finance expense	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CSM amortized	12.5	11.8	11.2	10.7	10.1	9.6	9.2	8.7	8.3	7.9
Ending CSM	87.5	75.7	64.5	53.8	43.6	34.0	24.8	16.1	7.9	0.0

In both examples, the coverage units represent the benefit that would be payable upon death under the given product design.

The considerations outlined in Section 3.1.1 regarding variable face amounts would also apply to this subsection.

Other types of UL products are of the limited-pay form (i.e., the cost of insurance charges is deducted from the funds for a period that is shorter than the benefit period). It is then common for such products to include guaranteed cash surrender values. If the CSV is considered an investment-return service (or investment-related service, where applicable), the general formulas illustrated above would continue to be appropriate.

3.2. Annuities

Annuity products include both:

- Contracts sometimes referred to as “immediate annuities” or “payout annuities” with no accumulation period. The amount of annuity payments is usually determined based on the amount of premium paid.
- Contracts often referred to as “deferred annuities” with an accumulation period prior to annuitization, during which premiums are held in an investment account, sometimes with surrender and/or maturity benefits available; the amount of annuity payments being determined based on the account value at the date of annuitization.

In the case of immediate annuities, it is clear that there are insurance contract services provided from the inception of the contract until the last benefit payment is made. For deferred annuities, it is equally clear that insurance contract services are provided during the payout phase, but not as clear whether insurance contract services are provided during the accumulation period.

The IFRIC received a submission about the recognition of profit applying IFRS 17 under a group of annuity contracts. The IFRIC conclusion, based on the fact pattern presented in an IASB Staff Paper published in June 2022 (June 2022 IASB Staff paper) is that no insurance coverage is provided in a reporting period unless a valid claim can be made in that period. This decision implies that (assuming there is no death benefit above any investment component) there is no insurance coverage in the accumulation period of a deferred annuity[2]. Therefore, insurance contract services in the accumulation period would be comprised entirely of investment-return services, and only if it can be demonstrated that such services are provided during that period.

Furthermore, the IFRIC conclusion rules out the present value of future payments as a valid measure of the quantity of benefits, for both immediate and deferred annuities. Per paragraph 11(b) of that paper, the present value of future payments approach would "misrepresent the quantity of the benefits provided in a period by considering claim amounts the policyholder can access and benefit from only in future periods."

3.2.1 Immediate annuities

For immediate annuities, insurance coverage in the form of annuity payments would occur throughout the lifetime of the contract. The "quantity of services" term in the general formula would simply be the amount of the periodic benefit payment in a product in which no investment-return services are provided.

$$CU_t = (Benefit\ Payment)_t * ({}_tp_x)$$

As an illustrative example, consider a 10-year immediate annuity with an annual benefit amount of $1,000 that does not provide any investment-return service. There are assumed decrements of 5% per year for mortality, and no discounting is assumed in the measure of coverage units for future service. The resulting coverage units and CSM amortization factors based on the above formula would be as follows:

Period	1	2	3	4	5	6	7	8	9	10
Annual Payment	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Probability of Survival ($_tp_x$)	100.0%	95.0%	90.3%	85.7%	81.5%	77.4%	73.5%	69.8%	66.3%	63.0%
(A) Current service (CU_t)	1,000	950	903	857	815	774	735	698	663	630
(B) Current + future service	8,025	7,025	6,075	5,173	4,315	3,501	2,727	1,992	1,294	630
CSM amortization factor [(A)/(B)]	12.5%	13.5%	14.9%	16.6%	18.9%	22.1%	27.0%	35.1%	51.3%	100.0%
Opening CSM	100.0	87.5	75.7	64.5	53.8	43.6	34.0	24.8	16.1	7.9
Insurance finance expense	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CSM amortized	12.5	11.8	11.2	10.7	10.1	9.6	9.2	8.7	8.3	7.9
Ending CSM	87.5	75.7	64.5	53.8	43.6	34.0	24.8	16.1	7.9	0.0

If it is determined that an investment-return service exists under a given annuity contract, care would be taken to ensure that the combination of the measures of investment-return service and insurance service produce a reasonably weighted measure of the insurance contract

[2] The June 2022 IASB Staff paper also has implications for annual-pay annuities (either immediate or deferred) and other similar structures in which benefits are not payable in every reporting period. The principles articulated in the IASB paper would imply that there can be no insurance coverage in reporting periods in which a benefit is not payable. The practical considerations associated with complying with that principle are not addressed in this educational note.

services. The specifics of the measure would depend on the facts and circumstances of the product design.

3.2.2 Deferred annuities

The general coverage unit formula suggested in Section 2.2 is useful to illustrate the considerations for measurement of the quantity of services provided in a deferred annuity.

The quantity of services component would reflect both insurance coverage and investment-return services, if it is assessed that investment-return service is provided under the contract.

$$CU_t = [(Insurance\ Coverage)_t + (Investment -\ Return\ Service)_t] * (\ {}_tp_x)$$

Regarding the first component, insurance coverage, the IFRIC conclusion clearly indicates that the benefit payment in a given period would be the appropriate measure of service provided. The formula would produce zero insurance coverage in the accumulation period[3], provided that no benefits (above any investment component) are payable during that period.

Regarding the second component, investment-return service, the following points would be important to consider:

- Does an investment-return service exist? If the requirements of B119B are not met, then there is no investment-return service.
    - To satisfy B119B(a), there must be an investment component, which IFRS17 defines as an amount payable to the policyholder in all circumstances, regardless of whether an insured event happens.
    - Have investment expenses related to the management of the assets backing the annuity liability been assessed as "directly attributable expenses"? If not, this may imply that no investment-return services exist (B65(ka)(ii)).
- If an investment-return service exists, is there appropriate weight put on the measure of the investment-return service versus the measure of the insurance coverage?
    - For example, a choice of account value as a measure of investment-return service might overweight the relative value of investment-return service compared to the benefit payment as a measure of insurance coverage.

For a product design in which no investment-return service exists during the accumulation phase, there would be no insurance contract services and no CSM amortization during the accumulation phase.

3.2.3 Annuities with guarantee period

Some annuity contracts have a guarantee period, during which benefits would be payable regardless of whether the insured survives. The following points would be considered in the assessment of coverage units:

[3] Or any other reporting period in which no annuity benefit is payable.

- Regarding the survival term in the coverage unit formula (${}_tp_x$), the probability of survival would be 100% during the guarantee period, with a cliff at the end of the guarantee period.
- The amounts paid during the guarantee period may be representative of investment-return services being provided, as the guaranteed benefits meet the condition in B119B(a) – amounts payable to the policyholder in all circumstances, regardless of whether an insured event happens. However, the other two conditions in B119B would also need to be met.

3.3. Accident and sickness

Coverage under accident and sickness (A&S) products generally takes the form of either (1) a lump sum payment upon the occurrence of the insured event such as in the case of critical illness products or (2) periodic payments for a defined period while the insured event persists, such as the continuation of disability under disability income (DI), long-term disability (LTD), and long-term care (LTC) products. Furthermore, benefits can be subject to maximums per occurrence, as in the case of extended health products.

For simplicity, this section assumes that there are no investment-return services in A&S products. To the extent that investment-return services do exist, considerations for reflecting investment-return services in the quantity of services metrics would be similar to those discussed in previous sections.

3.3.1 Benefits in the form of a lump sum

For benefits that pay a lump sum upon the occurrence of a specified insured event, such as critical illness, the quantity of benefits would generally be analogous to the coverage under a life insurance contract. Coverage units would therefore generally take the following form:

$$CU_t = (Lump\ Sum\ Benefit\ Amount)_t * ({}_tp_x)$$

When the face amount is variable, for example, when it is dependent upon the specific condition/illness, the amount used in the fulfilment cash flows would generally be the best representation of the quantity of benefits provided under the contract. However, the maximum amount payable under the contract would also be an appropriate measure of benefits provided.

3.3.2 Benefits in the form of installments

For products that provide coverage in the form of installments when a policyholder becomes disabled, such as individual disability insurance (DI), group LTD, and LTC, contractual benefits continue as long as the policyholder remains disabled, or for the duration of payments guaranteed in the contract, whichever occurs first. Consideration would be given to whether the entity's obligation to pay benefits will be treated as a liability for incurred claims (LIC) or a liability for remaining coverage (LRC) as this will impact the determination of both the coverage units and the coverage period. As a result, it would also impact the amortization pattern of the CSM.

For the LRC view, the coverage units would be the same regardless of whether the contract holder was in active life status or in disabled life status. In the LIC view, there would be no coverage for contract holders while in disabled life status, and the actuary would consider how recoveries from disability and return to active life status would affect the projection of coverage units.

The IASB staff, in the September 2018 TRG AP01, allow for both the LIC and LRC approaches; deeming that both approaches represent valid interpretations of IFRS 17, and that application is a matter of judgment.

LIC approach

The LIC approach views the insured event as the uncertain event that a policyholder becomes disabled, and the installment payments are simply settlement of the claim. Under this approach, insurance contract services would only be provided prior to disability and the quantity of services would be consistent with the accounting view of the amount of the incurred claim, which would be the estimated present value of all future installment payments that would settle the claim.

The IFRIC concluded that the "PV of future benefits" was not an acceptable coverage unit option for annuities. In that conclusion, the IFRIC ruled out the PV of benefits as a basis for coverage units because it would "misrepresent the quantity of the benefits provided in a period by considering claim amounts the policyholder can access and benefit from only in future periods" within the specific annuity fact pattern outlined in the decision. However, in the context of the LIC view of disability benefits, the fact pattern is substantially different. In particular, there are no "future claim amounts" beyond the period in which the disability occurs, only settlement of a previously incurred claim. Therefore, it follows that the quantification of the incurred claim must fully reflect the expected amount of all future settlement payments, not ignore those future payments.

Coverage units would therefore be treated conceptually similar to a life insurance contract or to the payment of a lump sum benefit, where the full amount of the potential claim is recognized as the measure of the quantity of benefits:

$$CU_t = PV(Benefit\ Payments)_t * ({}_tp_x)$$

As an illustrative example, consider a 10-year disability policy that pays an annual benefit of $1,000 while the insured is disabled during the term of the contract. This example assumes decrements of 5% per year for lapse, no discounting in the definition of the coverage units, no interest accretion of the CSM, and no consideration of claim termination rates. The resulting coverage units and CSM amortization factors based on the above formula would be as follows:

Period	1	2	3	4	5	6	7	8	9	10
Benefit Payments	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
PV of Future Benefits	10,000	9,000	8,000	7,000	6,000	5,000	4,000	3,000	2,000	1,000
Probability of Survival ($_tp_x$)	100.0%	95.0%	90.3%	85.7%	81.5%	77.4%	73.5%	69.8%	66.3%	63.0%
(A) Current service (CU_t)	10,000	8,550	7,220	6,002	4,887	3,869	2,940	2,095	1,327	630
(B) Current + future service	47,520	37,520	28,970	21,750	15,748	10,861	6,992	4,052	1,957	630
CSM amortization factor [(A)/(B)]	21.0%	22.8%	24.9%	27.6%	31.0%	35.6%	42.1%	51.7%	67.8%	100.0%
Opening CSM	100.0	79.0	61.0	45.8	33.1	22.9	14.7	8.5	4.1	1.3
Insurance finance expense	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CSM amortized	21.0	18.0	15.2	12.6	10.3	8.1	6.2	4.4	2.8	1.3
Ending CSM	79.0	61.0	45.8	33.1	22.9	14.7	8.5	4.1	1.3	0.0

This example implicitly takes the view that the "PV of future benefits" is the maximum amount payable under the contract (i.e., the sum of all future possible payments). In practice, the actuary could consider adjusting the PV of future benefits calculation to include claim terminations (recoveries and deaths) and/or discounting assumptions. Such adjustments would reflect the expected present value of the claim, rather than the maximum amount payable.

LRC approach

The LRC approach considers the insured events as both the uncertain event of the policyholder becoming disabled, and also remaining disabled and eligible to claim. Under this approach, insurance contract services would be provided throughout the term of the contract, regardless of whether the policyholder is active or disabled. This section provides two approaches that could be an appropriate choice for the measure of benefits provided.

Approach 1 is illustrated below:

$$CU_t = (Annualized\ Benefit\ Payment)_t * (\ {}_tp_x)$$

Consider the same 10-year disability policy illustrated above. Using the LRC approach, the resulting coverage units and amortization of the CSM based on the above formula would be as follows:

Period	1	2	3	4	5	6	7	8	9	10
Benefit Payments	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Probability of Survival ($_tp_x$)	100.0%	95.0%	90.3%	85.7%	81.5%	77.4%	73.5%	69.8%	66.3%	63.0%
(A) Current service (CU_t)	1,000	950	903	857	815	774	735	698	663	630
(B) Current + future service	8,025	7,025	6,075	5,173	4,315	3,501	2,727	1,992	1,294	630
CSM amortization factor [(A)/(B)]	12.5%	13.5%	14.9%	16.6%	18.9%	22.1%	27.0%	35.1%	51.3%	100.0%
Opening CSM	100.0	87.5	75.7	64.5	53.8	43.6	34.0	24.8	16.1	7.9
Insurance finance expense	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CSM amortized	12.5	11.8	11.2	10.7	10.1	9.6	9.2	8.7	8.3	7.9
Ending CSM	87.5	75.7	64.5	53.8	43.6	34.0	24.8	16.1	7.9	0.0

Approach 2 is defined below and was described and illustrated in the LIC section above:

$$CU_t = PV(Benefit\ Payments)_t * (\ {}_tp_x)$$

While the PV of benefits approach is appropriate for the LIC view of DI as noted above, it might be more difficult to justify its use under an LRC view given the similarity of the LRC DI benefit stream to an annuity. The aforementioned IFRIC conclusion ruled out PV of benefits as a valid coverage unit basis for payout annuities in the context of the specific fact pattern discussed in the June 2022 IASB staff paper.

Selection of the PV of benefits approach for DI under the LRC view may be seen as contradicting the principles articulated in the IFRIC decision, and therefore may require justification as to why the IFRIC decision on annuities would not be directly applicable to DI.

The pattern of revenue recognition (CSM amortization) may differ significantly between different approaches; an approach based on the annualized disability or LTC payment will lead to a slower amortization pattern than an approach based on the present value of future payments.

3.4. Segregated funds

Segregated funds typically have one or more insurance guarantees linked to an underlying account value that is driven by market fluctuations. Since the underlying items are managed by the entity and any excess market fluctuation is typically returned to the policyholder, the account value would be a good representation of investment-related or investment-return services. In addition, insurance services are provided when the guarantees embedded in the contract are higher than the account value. Therefore, the insurance contract services would be derived by analyzing the account value cash (AV) and the guarantee-related cash flows (GV) of the contract.

Due to asymmetric cash flows of these products, a stochastic valuation might be used to measure the probability-weighted estimate of future cash flows. The coverage units could be derived from the same valuation approach as is used for fulfilment cash flow measurement; therefore, if measured stochastically, coverage units could be calculated for each risk-neutral scenario. However, as specified in Section 2.3, alternative approaches, such as real-world stochastic scenarios or deterministic valuation, could be used to project coverage units.

In a similar fashion to other products presented in this document, a dual factor approach considering (1) the expected survivorship of the contract and (2) a volume weighting function of the account value (AV) and the guarantee-related cash flows (GV) of the contract could be used:

$$CU_t = \mathrm{CTE}_0(f(AV_t, GV_t) * ({}_tp_x))$$

The volume weighting adjustment is a matter of judgement, reflecting the quantity of benefits provided to the policyholder during the coverage period. One approach would be to base the coverage units on the maximum cash amount that could be paid to the policyholder in the period (see [Simplification 2] for an example). Other approaches are possible and would be based on a review of the investment service versus insurance service.

Approach based on the maximum benefit that could be paid in the current period

$$f(AV_t, GV_t) = max\left(AV_t, GMMB_t \cdot 1(t = Maturity\ date)^4, GMDB_t, LWA_t, GWA_t, SPIA_t\right)$$

Where LWA and GWA represent the lifetime withdrawal amount and the guaranteed withdrawal benefit available to be paid during the period, respectively. SPIA represents the life annuity payment during the reporting period from a GMIB or the life annuity guarantee generally embedded in segregated funds.

[4] 1(t = Maturity date) is a dummy variable equal to 1 at maturity date and 0 otherwise.

As an illustrative example, consider a GLWB contract sold to a 50-year-old policyholder. The contract has an initial account value of $1,100, a GMMB of $1,050 payable at attained age 100, and a GMDB of $1,000 with 5% annual decrements. The GLWB balance is set at $1,000 with a payout ratio of 5% starting at age 55. For simplicity, the GMMB and GMDB are reduced on a dollar-for-dollar basis in accordance with the LWA withdrawals. In this example, the coverage units are derived from a deterministic account value return scenario. The expected net account value return of 2.5% is decomposed into a gross return of 4.5% less a management expense ratio (MER) of 2%.

Period	1	2	3	4	5	6	7	8	51
Net account value return		2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Account value	1,100	1,128	1,156	1,185	1,214	1,245	1,212	1,178	0
GMMB	1,050	1,050	1,050	1,050	1,050	1,050	988	926	0
GMDB	1,000	1,000	1,000	1,000	1,000	1,000	938	876	0
LWA	0	0	0	0	0	62.2	62.2	62.2	62.2
Probability of Survival ($_tp_x$)	100.0%	95.0%	90.3%	85.7%	81.5%	77.4%	73.5%	69.8%	7.7%
(A) Current service (CU_t)	1,100	1,071	1,043	1,016	989	963	891	823	5
(B) Current + future service	15,231	14,131	13,060	12,017	11,001	10,012	9,049	8,158	5
CSM amortization factor [(A)/(B)]	7.2%	7.6%	8.0%	8.5%	9.0%	9.6%	9.8%	10.1%	100.0%
Opening CSM	100.0	92.8	85.7	78.9	72.2	65.7	59.4	53.6	0.0
Insurance finance expense	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CSM amortized	7.2	7.0	6.8	6.7	6.5	6.3	5.8	5.4	0.0
Ending CSM	92.8	85.7	78.9	72.2	65.7	59.4	53.6	48.2	0.0

The following methodologies are simplifications that could be appropriate in some circumstances.

Simplification 1: ***based on the account value***

$$f(AV_t, GV_t) = AV_t$$

This approach is reasonable when the service provided is largely related to the management of the account value on behalf of the policyholder over the duration of the contract, which would often be the case for segregated funds.

Simplification 2: ***based on expected maximum amount between account value and a chosen guaranteed value at each time step***

$$f(AV_t, GV_t) = max(AV_t, GV_t^*)$$

Where GV_t* would represent a chosen guaranteed base. This option only looks at one guarantee which would be representative of the quantity of services to be provided in the contract.

3.5. Group insurance

The choice of coverage units for group insurance may have limited implications compared to longer term individual contracts for the following reasons:

- The coverage period is typically one year and usually does not exceed three years. As the CSM is amortized quickly, revenue recognition may be less sensitive to the choice of coverage units.

- The quantity of benefits provided under a given contract would not be expected to vary much during the coverage period. Therefore, the choice of coverage units is more a matter of weighting the benefits provided within and between each contract in the group.
- Insurers may decide to value group insurance under the premium allocation approach (PAA), under which there is no CSM. Coverage units may still be necessary to demonstrate that the PAA produces a reasonable approximation to the GMA for contracts with a coverage period that exceeds one year.

The choice of coverage units for group insurance would generally be consistent with similar coverages for individual contracts. In practice however, it may be operationally difficult to apply the same coverage unit choices proposed for individual contracts to group contracts because the data may not be readily available for some benefits.

Furthermore, group insurance often combines multiple coverage types (such as life, disability, and extended health). Therefore, the considerations described in Section 4 of this document regarding combinations of coverages would need to be assessed. Since group insurance coverages have different frequency and severity levels, it might be reasonable to apply some type of normalization of the coverage units prior to combination. Judgment may be required such that the amortization of the CSM is reasonable with regards to the service provided. See Section 4 for examples.

4. Combination of coverages within a group

The guidance in the previous sections focused on contracts with a single type of coverage. This section will focus on the principles for establishing coverage units for groups of contracts that combine more than one type of coverage. The overarching objective would always be to establish a coverage unit basis that produces a reasonable proxy for the aggregate quantity of service provided by the contracts in the group, in accordance with the requirements of IFRS 17.B119.

Different potential approaches for developing coverage units in the context of a group of contracts with multiple coverages include the following:

1. Simple sum of the various contractual coverages
2. Normalization of the coverages prior to combining them
3. Determining a coverage unit reflecting the characteristics of all benefits

Any choice would be acceptable provided that it reasonably represents the quantity of insurance contract services. For example, approach 3 might be used if approach 1 puts too much weight on one coverage relative to the others or if approach 2 cannot be used due to lack of a suitable base for normalization. The remainder of this section discusses potential considerations with respect to the various approaches.

Approach 1: simple sum of the various contractual coverages

This approach is consistent with the approach presented by the IASB staff in the May 2018 TRG Agenda Paper 05 (AP05), in addition to being relatively simple to implement.

As an illustrative example, consider an entity that has a group comprised of two group insurance contracts. The first contract has a one-year rate guarantee and offers a full suite of group benefits, while the second contract has a two-year rate guarantee and offers only group life benefits. The specifics of the two contracts are summarized in the following table:

	Group Insurance contract #1		Group Insurance contract #2	
Rate Guarantee (quarters)	4		8	
Initial CSM	100		200	
Coverages in the Group Contract	Maximum Coverage	Expected Premiums per quarter	Maximum Coverage	Expected Premiums per quarter
Health	500,000	100		
Dental	2,500	50		
STD	2,000	50		
LTD	60,000	100		
Life	10,000	100	200,000	2,000
Total	**574,500**	**400**	**200,000**	**2,000**

Approach 1 would be a simple summation of the various maximum contractual coverages. In this illustration, there are no decrements and the interest rate used to discount the coverage units and to accrete the CSM are assumed to be zero.

Period	1	2	3	4	5	6	7	8
Quantity of Benefits	774,500	774,500	774,500	774,500	200,000	200,000	200,000	200,000
Probability of Survival ($_tp_x$)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(A) Current service (CU_t)	774,500	774,500	774,500	774,500	200,000	200,000	200,000	200,000
(B) Current + future service	3,898,000	3,123,500	2,349,000	1,574,500	800,000	600,000	400,000	200,000
CSM amortization factor [(A)/(B)]	19.9%	24.8%	33.0%	49.2%	25.0%	33.3%	50.0%	100.0%
Opening CSM	300.0	240.4	180.8	121.2	61.6	46.2	30.8	15.4
Insurance finance expense	0	0	0	0	0	0	0	0
CSM amortized	59.6	59.6	59.6	59.6	15.4	15.4	15.4	15.4
Ending CSM	240.4	180.8	121.2	61.6	46.2	30.8	15.4	0.0

If in the judgment of the actuary and in the context of the specific circumstances, the summation of contractual coverages would not produce a reasonable representation of the services being provided, the actuary would choose another method. In the example above, the CSM is amortized quickly over the first four periods. In this case, the actuary would apply judgment in assessing whether this amortization pattern produces a reasonable representation of the services being provided.

Approach 2: normalization of the coverages prior to combining them

The actuary could assess whether the exposures for each of the coverages are easily comparable. For example, a whole life policy with a term life rider might have coverages that are easily comparable based on the relative size of the respective death benefits, whereas it might be more difficult to compare the respective exposures of a dental coverage and a life coverage under a group insurance contract. The chosen coverage unit basis would reasonably represent the insurance contract services being provided.

Following on the previous example, the actuary may decide that a more sophisticated weighting may produce a more reasonable representation of the services provided. One

possible approach is to normalize coverage units based on expected premiums as an approximation for the quantity of benefits provided under the different coverages in the group of contracts. This approach would produce the following CSM amortization pattern:

Period	1	2	3	4	5	6	7	8
Quantity of Benefits	2,400	2,400	2,400	2,400	2,000	2,000	2,000	2,000
Probability of Survival ($_tp_x$)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(A) Current service (CU_t)	2,400	2,400	2,400	2,400	2,000	2,000	2,000	2,000
(B) Current + future service	17,600	15,200	12,800	10,400	8,000	6,000	4,000	2,000
CSM amortization factor [(A)/(B)]	13.6%	15.8%	18.8%	23.1%	25.0%	33.3%	50.0%	100.0%
Opening CSM	300.0	259.1	218.2	177.3	136.4	102.3	68.2	34.1
Insurance finance expense	0	0	0	0	0	0	0	0
CSM amortized	40.9	40.9	40.9	40.9	34.1	34.1	34.1	34.1
Ending CSM	259.1	218.2	177.3	136.4	102.3	68.2	34.1	0.0

Use of premiums as the basis for coverage units would not be appropriate in all circumstances. Question 6.16 of the *Application of IFRS 17 Insurance Contracts* educational note indicates that premiums might be used as proxies of coverage units but not if they:

- Are receivable in different periods to the insurance services;
- Reflect different probabilities of claim for the same insured event in different periods rather than different levels of stand-ready service; or
- Display different levels of profitability in contracts rather than the stand-ready service.

In the context of this example, use of expected premiums would likely be appropriate, but it may not be appropriate in the context of a longer duration contract if premiums reflect different probabilities of claim as time passes.

Other normalization approaches could also be appropriate. The actuary would apply judgment in assessing whether a normalization approach produces a reasonable representation of the aggregate quantity of services provided by the contracts in the group based on the specific facts and circumstances of the group of contracts. In particular, any approach that amortizes all CSM before all insurance contract services are provided would not be appropriate.

Approach 3: determine a coverage unit reflecting the characteristics of all benefits

One application of this approach would be in situations where there are multiple coverages within a contract, but one or two of the coverages are clearly dominant relative to the others. In such situations, it could be reasonable to have the coverage units reflect only the dominant coverage(s).

In the context of the specific examples used to illustrate approaches 1 and 2 above, it was assumed that it would not be appropriate to ignore some of the benefits as insignificant, therefore those illustrations have not been extended to this section. Had there been a dominant benefit or benefits, the considerations described in Section 3 of this educational note could be used to determine the coverage units for the benefits considered.

Another potential application of approach 3 would be to select a metric that is a good proxy for all of the coverages combined. For example, creditor insurance may provide life and disability insurance based on the amount of the loan; in this example, it might be reasonable to use the

projected loan balance as the basis for the coverage units reflecting the combination of all benefits. As another example, the number of certificates might be a good basis for coverage units for group insurance, provided that the volume of coverage does not vary substantially between certificates.

Finally, for segregated funds, simplification 1 in Section 3.4 is an example whereby the account value and/or a single guarantee value could be a good proxy for all coverages under the contract.