

# EXPOSURE DRAFT: A PUBLIC POLICY PRACTICE NOTE

## Application of ASU 2018-12

### Part I: Traditional and Limited-Payment Contracts – Basic Considerations Related to the Liability for Future Policy Benefits

*July 2021*

Developed by the Long-Duration Contracts Work Group of the  
Financial Reporting Committee of the American Academy of  
Actuaries



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## 2021 Long-Duration Contracts Work Group

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This white paper covers aspects of the application of Accounting Standards Update 2018-12, *Targeted Improvements to the Accounting for Long-Duration Contracts*, published August 2018 by the Financial Accounting Standards Board. Due to the number of areas of practice impacted by this accounting standard, the white paper is being exposed for comment in sections, of which this is the first. Upon completion of all sections, the white paper will be combined into a single document with additional contextual material added as necessary.

The comment deadline for this exposure draft is September 30, 2021. Please send any comments to [rmfrcanalyst@actuary.org](mailto:rmfrcanalyst@actuary.org).

## I. Level of aggregation

### Overall Level of aggregation

#### *Q 1.1 What is the guidance regarding determining cohorts?<sup>1</sup>*

A: Financial Accounting Standards Board (FASB) Accounting Standard Codification (ASC) Paragraph 944-40-30-7 specifies that, “In determining the level of aggregation at which reserves are calculated, an insurance entity shall not group contracts together from different issue years but shall group contracts into quarterly or annual groups.”

Furthermore, as stated in paragraph 944-40-65-2(d)(6) regarding transition, “For contracts in force issued before the transition date, an insurance entity shall not group contracts together from different original contract issue years but shall group contracts into quarterly or annual groups on the basis of original contract issue date for purposes of calculating the liability for future policy benefits. For acquired contracts, the acquisition date shall be considered the original contract issue date.” It should be noted that paragraph 944-40-65-2(d)(5) clarifies that under the modified retrospective approach, “[t]he transition date shall be considered the revised contract issue date for purposes of subsequent adjustments but not for purposes of contract grouping.”

Thus, the annual issue year limitation applies both at transition and prospectively. However, if companies have blocks of older policies that are small and shrinking, the insurer may be able to aggregate across these older years based on materiality.

Guidance related to disclosure requirements also applies. Paragraph 944-40-50-6 requires that information be disclosed at a level of aggregation “that allows users to understand the amount, timing, and uncertainty of future cash flows arising from the liabilities. An insurance entity shall aggregate or disaggregate the disclosures...so that useful information is not obscured by the inclusion of a large amount of insignificant detail or by the aggregation of items that have significantly different characteristics....” Cohorts must be constructed in such a way as to enable companies to comply with these disclosure requirements.

In addition, paragraph 944-40-55-13H states that disclosure requirements related to deferred acquisition cost assets (DAC) and the liability for future policy benefits, including the period-to-period rollforwards of such amounts, should not be aggregated across reportable segments. Specifically, “(w)hen applying the guidance in paragraphs 944-30-50-2A through 50-2B, 944-40-50-6 through 50-7C, and 944-80-50-1 through 50-2, an insurance entity should not aggregate

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<sup>1</sup> At the time of publication, the Insurance Experts Panel of the AICPA is currently discussing issues related to this question in *Targeted Improvements to Long-Duration Contracts Implementation Issue #16: Level of Aggregation for the Measurement of the Liability for Future Policy Benefits*, which could provide additional considerations for determining a cohort.

amounts from different reportable segments according to Topic 280, if applicable.” Therefore, in order to comply with this requirement, cohorts cannot cross reportable segments.

***Q 1.2 What other items could be considered when determining cohorts?<sup>2</sup>***

A: There is nothing prescriptive in FASB Accounting Standard Update (ASU) 2018-12 that defines what contracts should be grouped together for measurement purposes. This leaves the guidance to rely on fundamental principles of accounting, one of which is that accounting should result in a faithful representation of the underlying obligations being measured. Under this concept, the primary considerations for determining what contracts to group into cohorts relate to the defining characteristics of the contracts; contracts should only be grouped with contracts sharing similar, key characteristics to ensure that the measurement of the cohort of policies appropriately considers, and does not distort, the impact of these characteristics on the accounting.

Characteristics to consider in the establishment of cohorts include how the business is managed, the features of the underlying contracts and how the business is priced and measured. Only contracts sharing substantially similar characteristics should be combined into cohorts; those with differing characteristics should be measured separately. Another useful set of criteria are those contained in paragraph 944-30-25-1B which relates to the grouping of contracts for the purposes of allocating acquisition costs. It states that groupings of insurance contracts should be “consistent with the entity’s manner of acquiring, servicing, and measuring the profitability of its insurance contracts.” These considerations are relevant and useful for the determination of cohorts for measuring the liability for future policy benefits as well.

When considering how to set cohorts at a level lower than issue year, insurers may consider three competing drivers.

- Transparency attributing results to the right line of business: Smaller cohorts isolating key product groups would provide management more transparency into the performance of the business.
- Operational efficiency considering sources of data: If policies are accounted for in different administrative systems, different valuation systems, or are otherwise part of a separate data lineage, it may be operationally easier to keep them separate. Similarly, companies that report subsidiary U.S. Generally Agreed Accounting Principles (GAAP) statements may want to keep these separate for consolidated reporting. Otherwise, they would need to calculate two U.S. GAAP reserves, one for the subsidiary and one for the

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<sup>2</sup> At the time of publication, the Insurance Experts Panel of the AICPA is currently discussing issues related to this question in *Targeted Improvements to Long-Duration Contracts Implementation Issue #16: Level of Aggregation for the Measurement of the Liability for Future Policy Benefits*, which could provide additional considerations for determining a cohort.

consolidated reporting. As noted in Q1.1, companies should not combine policies across reportable segments due to disclosure requirements.

- Volatility: Generally, more products and policies within a cohort will result in a lower risk of piercing the 100% net premium ratio cap and thereby reduce the volatility that may result due to hitting this cap.

***Q 1.3 Once cohorts are established, can they be changed later?*<sup>3</sup>**

A: Cohorts may not be changed once established. For example, two cohorts may not be combined into a single cohort after the cohorts have been established, unless it can be shown that such a combination does not result in materially different reported financial results in each reporting period over the remaining lifetime of the business. Similarly, a single cohort may not be deconstructed to form two or more cohorts after it is initially established.

This does not mean that the definition of what constitutes a cohort needs to stay constant from year to year. If an actuary finds it better to separate two products that were grouped together in prior years' cohorts into separate cohorts when establishing new issue year cohorts, or to combine products that were previously measured in separate cohorts in prior years, they may do so. Similarly, an actuary may have established annual cohorts in the past and choose to establish quarterly cohorts for new business in the future.

***Q 1.4 How should DAC grouping affect cohorting?***

A: For traditional and limited-pay contracts, there is a choice of amortizing DAC at either a contract-level basis or a grouped basis. If a contract-level basis is chosen, then DAC is not affected by the LFPB grouping. However, if DAC is amortized on a grouped basis, then the grouped basis for DAC must be consistent with the grouped basis for determining the net premium ratio and LFPB.

**Product considerations**

***Q 1.5 What are the product considerations when establishing a cohort?*<sup>4</sup>**

No prescriptive guidance is provided to define a cohort, so actuaries would apply considerations that align with the principles underlying the guidance and U.S. GAAP in general. Product

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<sup>3</sup> At the time of publication, the Insurance Experts Panel of the AICPA is currently discussing issues related to this question in *Targeted Improvements to Long-Duration Contracts Implementation Issue #16: Level of Aggregation for the Measurement of the Liability for Future Policy Benefits*, which could provide additional considerations for determining a cohort.

<sup>4</sup> At the time of publication, the Insurance Experts Panel of the AICPA is currently discussing issues related to this question in *Targeted Improvements to Long-Duration Contracts Implementation Issue #16: Level of Aggregation for the Measurement of the Liability for Future Policy Benefits*, which could provide additional considerations for establishing a cohort.

considerations should be applied consistently across an insurance entity when determining what contracts to group together within cohorts. Considerations include, but are not limited to:

- Accounting model,
- Expected duration,
- Benefit type such as mortality, morbidity, or longevity, and
- Profitability level.

These are each discussed in the following questions.

***Q 1.6 Can limited pay and lifetime pay policies be combined into one cohort?***

A: No. Limited pay policies are covered by a different accounting model than lifetime pay policies. Under limited pay, profit is earned over the lifetime of the contract and generally emerges in proportion to insurance in force (life insurance) or benefit payments (annuities) through the establishment and release of a deferred profit liability. Lifetime pay policies, on the other hand, recognize income in proportion to gross premiums through the net premium liability model. Because these policy types, limited pay and lifetime pay, are covered by different requirements under U.S. GAAP, it is not appropriate to combine them into the same cohort for the purpose of measuring the liability for future policy benefits.

***Q 1.7 Can contracts with different expected durations be combined within a single cohort?<sup>5</sup>***

A: Combining contracts with different expected durations is not prohibited.

As noted in Q 1.2, the primary consideration for determining the composition of a cohort is the characteristics of the contracts themselves. To the extent that the expected duration of a contract is a significant, defining characteristic of the contract, or is an indicator of other significant attributes of the contract, including its market, pricing, and contract features, then the duration of the contract should be one of the characteristics of the contracts to be considered when establishing cohorts.

This does not mean that it is necessary or even desirable to require contracts to be in separate cohorts solely because they have different expected durations. At the extreme, were the combining of policies with different durations prohibited, then separate issue-age cohorts would be required for products that mature or expire at a specific age. This would be impractical and certainly not required or suggested in the guidance. Nonetheless, expected duration is a valid consideration.

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<sup>5</sup> At the time of publication, the Insurance Experts Panel of the AICPA is currently discussing issues related to this question in *Targeted Improvements to Long-Duration Contracts Implementation Issue #16: Level of Aggregation for the Measurement of the Liability for Future Policy Benefits*, which could provide additional considerations for establishing a cohort.

An argument for combining products with different durations is to increase diversification within the cohort in line with the law-of-large-numbers principle underpinning insurance. Again, this is in the context of contracts being similar enough in all other significant characteristics to warrant combination within a cohort.

An argument against combining products with markedly different durations is that emerging profitability could be confusing and thereby frustrate one of the motivating factors for the targeted improvements: increased transparency. For example, combining a block of 10-year level term life insurance with a block of 20-year level term can create discontinuities in the liability measurement as the 10-year policies roll off the books.

Balancing the competing objectives of transparency, credibility and maintainability is a judgment call. The threshold at which different durations constitute enough of a defining characteristic to require separate cohorts may differ from product to product and from company to company as the determination is made in the context of the entirety of the contracts' attributes. Though practice is still developing in this area, evidence suggests that actuaries are evenly split between those who would combine 10-year level term life insurance policies with 20-year policies and those who would maintain separate cohorts, all other contractual attributes being equal. Actuaries looking to make decisions around levels of aggregation may wish to test separate vs. combined results on benchmark products like these.

***Q 1.8 Can products with different types of benefits be combined within a single cohort?***

A: Combining different products within cohorts is not explicitly prohibited.<sup>6</sup> However, as discussed in Q 1.1, disclosure requirements and other related guidance must be considered when making decisions around cohorting in order to ensure the ability to comply with such disclosure or other guidance.

As noted in Q 1.2, the primary consideration for determining the composition of a cohort is the characteristics of the contracts themselves. Actuaries assessing the characteristics of different products may conclude that they are similar enough in all significant respects (features, markets, pricing, etc.) that combination within the requirements of ASU 2018-12 guidance is appropriate. In other cases, different products will be significantly different enough in various attributes to require separation. The ASU disclosure example under paragraph 944-40-55-29E separates term life insurance from whole life insurance. Some actuaries believe this suggests a prohibition against grouping across certain product types. Others note that this is only an illustration of a company with two products, and that different companies may come to different conclusions. Larger companies with more product types may find it appropriate to present them at a higher level, but form cohorts and perform calculations at a more granular level.

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<sup>6</sup> At the time of publication, issues related to cohorting are currently under discussion at the Insurance Experts Panel of the AICPA. The issues under discussion will be identified in *Targeted Improvements to Long-Duration Contracts Implementation Issue #16*. The outcome of these deliberations could impact components of this answer.

***Q 1.9 Can products with different levels of profitability be combined?***

A: Combining different products within cohorts is not explicitly prohibited.

As noted in Q 1.2, the primary consideration for determining the composition of a cohort is the characteristics of the contracts themselves. The pricing and expected profitability of a contract is one of many characteristics to consider in determining whether to combine contracts within a single cohort, but it is not the only one and is not necessarily determinative on its own.

**Impacts of how the business was acquired**

***Q 1.10 For contracts covering a group of policies or insured lives, what is the unit of account (i.e., the level at which the liability is measured)?<sup>7</sup>***

A: The level of aggregation is not clearly defined in the ASU for groups of policies or insured lives within a contract. Examples include assumed reinsurance contracts,<sup>8</sup> group long-term care (LTC), and pension risk transfer (PRT) business.

Relevant paragraph from the ASU:

944-40-30-7 In determining the level of aggregation at which reserves are calculated, an insurance entity shall not group contracts together from different issue years but shall group contracts into quarterly or annual groups.

Based upon the above, the only prescriptive guidance is that an insurance entity shall not group contracts together from different issue years but shall group contracts into quarterly or annual groups.

Using a newly issued reinsurance contract (from the perspective of the assuming reinsurer) as an example, an additional layer of complexity exists as to the date assigned to the underlying cash flows. This could impact both the level of aggregation at which contracts are grouped for measurement as well as the discount rate assigned to such cash flows. There are two potential views:

1. The accounting date, and thus the “issue year,” is the date the reinsurance contract was consummated. This position takes the view that the agreement is between the ceding company and the reinsurer and not between the reinsurer and the underlying

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<sup>7</sup> At the time of publication, the Insurance Experts Panel of the AICPA is currently discussing issues related to this question in *Targeted Improvements to Long-Duration Contracts Implementation Issue #16: Level of Aggregation for the Measurement of the Liability for Future Policy Benefits*, which could provide additional considerations for determining a cohort.

<sup>8</sup> At the time of publication, issues related to the unit of account for reinsurance contracts are currently under discussion at the Insurance Experts Panel of the AICPA. The issues under discussion will be identified in *Targeted Improvements to Long-Duration Contracts Implementation Issue #12b*. The outcome of these deliberations could impact components of this answer.



policyholders individually. A company adhering to this view would presumably need to consider future cash flows related to policies not yet reinsured but projected to be reinsured under the terms of the reinsurance contract within the definition of the liability for future policy benefits.

2. The reinsurance contract is segregated into individual cohorts by underlying policy issue dates. This position takes the view that a reinsurer assumes the risk concurrent with issuance of the direct contracts.

While these two views exist, it is expected that the second view is the prevalent approach and will be applied most commonly in practice. A reason for this that there is nothing in the ASU that instructs a company to reconsider its definition of what the unit of account is for reinsurance contracts. Therefore, a company looking to apply the first view presumably would have to demonstrate that this view was consistently applied for reinsurance assumed prior to the adoption of ASU 2018-12. Absent such prior application, the application of the first view would likely be considered a change in accounting policy and a company looking to adopt this view would have to demonstrate its preferability, a potentially difficult task given the likely acceptance of the second view as the dominant method of application.

Though not entirely analogous, the treatment of some group insurance contracts may be subject to similar considerations as described above for reinsurance assumed.

For some long duration group insurance contracts, such as long-term care insurance, the individual often receives a certificate which effectively turns it into an individual contract. The individual can continue the contract at the original terms when the individual is no longer part of the group. For these types of products, using the individual certificate level may be appropriate.

For PRT business the lives are normally all acquired at the same time. Therefore, they all have the same “issue date” and could be part of the same cohort. However, it is unclear whether they are all one contract or are individual contracts. Some believe that the PRT contract constitutes a single contract and therefore, for DAC amortization purposes, the expected life for the contract extends until the last benefit payment to the last surviving individual is paid. Others believe this is inappropriate, as the interpretation could result in a very slow DAC amortization pattern where a large portion of the DAC balance could remain even after nearly all of the underlying individuals have left the group. They might argue that the individual lives within the contract constitute separate contracts and that the DAC associated with each life is amortized over the life of that particular annuity.<sup>9</sup>

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<sup>9</sup> Issues related to the amortization of DAC on contracts with declining amounts of insurance in force are currently under discussion at the Insurance Experts Panel of the AICPA. The outcome of these deliberations could impact components of this answer.

***Q 1.11 For contracts acquired in a business combination, what is the issue date?***

A: The issue date should be the date of acquisition which is the date of the business combination.

ASC 944-40-65-2(c)(6) states:

*For contracts in force issued before the transition date, an insurance entity shall not group contracts together from different original contract issue years but shall group contracts into quarterly or annual groups on the basis of original contract issue date for purposes of calculating the liability for future policy benefits. For acquired contracts, the acquisition date shall be considered the original contract issue date.*

For business entities that were combined prior to 2001 and for which the pooling-of-interests method was applied to account for the merger, the contracts existing in the two entities prior to merger are not considered “acquired contracts” in the meaning of ASU 944-40-65-2. The issue date of such contracts goes back to when they were first issued to the contract holder.

***Q 1.12 Can business assumed through a reinsurance contract be combined with directly issued business in the same cohort?***

A: As noted in Q 1.2, the primary consideration for determining the composition of a cohort is the characteristics of the contracts themselves. Considerations related to the manner in which a contract or set of contracts is acquired could constitute a relevant characteristic to consider in determining whether to group contracts within a cohort, or it could point the actuary to related characteristics (e.g., pricing, administration, markets) that are relevant characteristics as well.

Where a company is a direct writer of business and also a reinsurer, the ASU is silent on the aggregation of assumed and direct business. The ASU, however, is clear that “issue year” of assumed business is the year the business was assumed by the reinsurer. For example, if an in-force block of business that was originally sold between 2000 and 2020 by the cedant is assumed in 2020 by the reinsurer, the “issue year” for all the policies from the reinsurer’s perspective is 2020. Therefore, if a company concludes that it is appropriate to combine business assumed through reinsurance with direct business and the company defines its cohorts by calendar year of issue, only direct business also sold in 2020 could be combined with the reinsured business in a single cohort.

## **Issue date considerations**

### ***Q 1.13 Can cohorts be smaller than an issue year?<sup>10</sup>***

A: Yes. The guidance specifies that contracts can be combined into annual or quarterly cohorts for purposes of calculating the net premium ratio and determining the LFPB. However, actuaries would be advised not to take quarterly to be the most granular level at which cohorts may be set. Flexibility to set cohorts at lower levels is acceptable.

In some cases, actuaries may choose to set cohorts lower than quarterly levels to achieve the objective of grouping contracts with like characteristics or to increase transparency of the results of certain products. For example, if a product is repriced, actuaries may choose separating contracts sold before and after the repricing into separate cohorts. Similarly, actuaries may choose separating pension risk transfer transactions or other large transactions of several contracts that occur in the same quarter. Such granular aggregation is not required but may provide more reasonable results in some circumstances.

Therefore, actuaries may choose grouping some contracts into issue year cohorts, but group other contracts into smaller cohorts. While such differences in grouping may be appropriate, it is unlikely that actuaries will find it necessary to change the frequency with which they establish new contract cohorts from year to year unless there is a trigger event such as repricing. Once the type of cohort is determined for a product, actuaries would typically apply that same grouping to future contracts.

### ***Q 1.14 Can cohorts be bigger than an issue year?***

A: No. The guidance specifies that contracts should not be grouped together from different issue years. However, there are some nuances to this guidance. For example, contracts acquired through a business combination are deemed to have the acquisition date as the issue date for accounting purposes. This may well result in contracts sold to policyholders in different years residing in the same cohort for measurement under ASU 2018-12. See the relevant question covering “Impacts of how the business was acquired” for further clarification.

### ***Q 1.15 Can an annual cohort be different than a calendar year? Can it be different by product?<sup>11</sup>***

A: The guidance specifies that contracts should be grouped by issue year. However, actuaries might find it appropriate to align the issue year cohort with a timeframe other than the calendar

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<sup>10</sup> At the time of publication, issues related to cohorting are currently under discussion at the Insurance Experts Panel of the AICPA. The issues under discussion will be identified in *Targeted Improvements to Long-Duration Contracts Implementation Issue #16*. The outcome of these deliberations could impact components of this answer.

<sup>11</sup> Issues related to cohorting are currently under discussion at the Insurance Experts Panel of the AICPA. The issues under discussion will be identified in *Targeted Improvements to Long-Duration Contracts Implementation Issue #16*. The outcome of these deliberations could impact components of this answer.

year, and there is nothing in the guidance that specifically prohibits this practice. For example, if an insurance entity's fiscal year is different from a calendar year, it may be easier to follow the fiscal year timing for purposes of aligning the cohorts with disclosure requirements. It may also be desirable to align the issue year cohort with something other than the insurer's fiscal year. For example, actuaries might find it useful to align issue years with their annual assumption update calendar.

### **Cohort impacts on discount rates**

***Q 1.16 What discount rate should be used to measure the liability for future policy benefits for a cohort while it is open?<sup>12</sup>***

A: Normally, the approach aligns with the approach that will be used to lock in the discount rate once the cohort is closed. For example, if the policy adopted by the company is to set the locked in discount rate based on the average of the upper-medium grade fixed-income instrument yields that exist on the middle of each month that the cohort is open, then the selection of discount rate to use while the cohort is still open might follow this same formula. The underlying concept that the discount rate should represent the rates applicable within the cohort when the contracts were acquired should be applied even when valuation occurs at a date before the cohort is closed.

However, the application of any methodology that applies an average rate or rates to all contracts in the cohort cannot be considered "locked-in" until the cohort is closed to new entrants. These methodologies have implications specifically for companies that produce interim quarterly reporting, since they result in a disconnect in the locked-in rate assumptions from one period to another. The only method that results in a true lock-in that is unchanged while the cohort is still open and beyond is one that assigns a discount rate to each contract as it is acquired and locks in that rate to apply to that contract forever, resulting in multiple discount rates within a single cohort. If practical, this quality of the contract-specific discount rate approach may be attractive.

***Q 1.17 Can products with cash flows denominated in different currencies be combined within a single cohort?<sup>13</sup>***

A: The guidance is silent on the aggregation of products with different currencies. However, because products denominated in different currencies are likely sold in different markets and may have other significant differences in product design, it is normally expected that products with cash flows in different currencies would be held in different cohorts. Similarly, disclosure guidance (944-40-50-5A) may require segregation of contracts with different currencies to the

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<sup>12</sup> At the time of publication, issues related to discount rates for subsequent measurement are currently under discussion at the Insurance Experts Panel of the AICPA. The issues under discussion will be identified in *Targeted Improvements to Long-Duration Contracts Implementation Issue #6*. The outcome of these deliberations could impact components of this answer.

<sup>13</sup> Issues related to cohorting are currently under discussion at the Insurance Experts Panel of the AICPA. The issues under discussion will be identified in *Targeted Improvements to Long-Duration Contracts Implementation Issue #16*. The outcome of these deliberations could impact components of this answer.

extent that such currencies indicate differences in territories in which contracts are written and disclosures are constructed at that level.

In some instances, however, there may be facts and circumstances that would encourage the actuary to aggregate products with different currencies into a single cohort. This may be the case in certain reinsurance assumed transactions, for example, where cash flows in different currencies may exist within the same contract.

Actuaries planning to aggregate contracts with cash flows in different currencies would have to address numerous practical and conceptual issues. Clearly, historical and projected cash flows would have to be translated to a single, functional currency to enable the calculation of the liability for future policy benefits. While this translation will have already occurred for all historical transactions for reporting in prior period income statements, a determination is needed of what exchange rates to use for projected future cash flows. A related potential complexity concerns discount rates (944-40-30-9). The definition of “fixed-income instrument yield” can vary based on different factors, including the currency/country of the market where the fixed-income instrument is located. Consideration will have to be made regarding the use of different discount rates for products with different currencies, and how they relate to the projected exchange rates.

In addition, introducing different currencies introduces further complexity in foreign exchange impacts, especially if some of the currencies are functional currencies for the reporting entity and others are not. Quantifying the impacts of moving from functional currencies to the reporting currency to identify what piece of exchange rate movements is recorded in OCI as required under ASC 830 may be particularly challenging. Rollforwards would need to expand to accommodate foreign exchange movements as a component of the change in reserves.

For these reasons, and potentially more, aggregation of cash flows denominated in different currencies may prove difficult to justify conceptually and difficult to implement practically.

## II. Cash flow assumption setting and remeasurement

### *Q 2.1: How are assumptions used in the measurement model under ASU 2018-12?*

A: The way that assumptions are used in the measurement model does not change. The net level premium method is preserved. Only the approach to setting assumptions is changed. The new measurement model provides fairly restrictive guidance for establishing discount rate assumptions (which are locked in for purposes of interest accretion) and the requirement that cash flows assumptions be updated periodically, at least once per year.

### *Q 2.2: How is assumption setting different under ASU 2018-12?*

A: ASU 2018-12 distinguishes between “cash flow assumptions” and “discount rate assumptions,” with different requirements for each. Cash flow assumptions (including mortality, morbidity, terminations, expense) are current expectations without any provision for adverse deviation. Instead of remaining locked-in, the assumptions “shall be reviewed—and if there is a change, updated—on an annual basis at the same time every year” (944-40-35-5a) for subsequent valuations, with the possible exception of expense assumptions (see Q2.15). In addition, actual cash flow experience is periodically substituted for expected at least once each year. The change in reserve due to these updates creates a corresponding charge or credit to net income.

The discount rate assumption is an upper-medium grade fixed-income instrument yield. The discount rate used to calculate the net premium ratio and the reserve impact that is recognized in net income is determined upon finalization of the cohort at inception. The current rate as of each reporting date is used to calculate an adjusted reserve recognized through other comprehensive income. Discount rate assumptions are covered more thoroughly in another section of this white paper.

A high-level summary of the changes follows:

GAAP prior to ASU 2018-12	GAAP after ASU 2018-12
All assumptions are locked-in at inception, except in the case of a premium deficiency	Cash flows are updated at least annually to actual experience, current expectations and discounting for current market rates. Expense assumptions may be locked-in at inception or treated like other cash flows, at the insurer’s option
Maintenance expenses are a component of the liability for future policy benefits	Only nonlevel costs are included in the liability for future policy benefits

<p>Cash flow assumptions are best estimate plus a provision for the risk of adverse deviation (PAD). They are set at contract inception.</p>	<p>Assumptions are current best estimate, with no PADs.</p>
<p>The discount rate is based on the entity’s expected portfolio yield. A small reduction to the discount rate is normally made as a provision for the risk of adverse deviation.</p>	<p>The discount rate is an upper-medium grade fixed-income instrument yield. The rate is fixed at finalization of the cohort inception and used for reporting interest accretion on the liability for reporting in net income.</p> <p>The change in present values due to updating to current discount rate is reflected in other comprehensive income (OCI). The net premiums are not updated for changes in discount rates.</p>
<p>Assumptions are updated only for a premium deficiency (loss recognition).</p>	<p>Assumptions are reviewed, and updated if necessary, at least annually. Net premiums are capped at 100% of gross premiums at the cohort level but the liabilities for future policy benefits are not subject to separate loss recognition.</p>

***Q 2.3: How should assumptions be determined upon transition to ASU 2018-12?***

A: As mentioned above, current assumptions without provision for adverse deviation are needed. There are two key dates for implementation of the new standard—the effective date and the transition date. The transition date is defined as “the beginning of the earliest period presented” (ASC 944-40-65-2 c.) in the financial statements. This is normally two years, but there may be exceptions.

The effective date is the start of the fiscal year beginning after December 15, 2022, for public business entities that meet the definition of a Securities and Exchange Commission (SEC) filer, excluding entities eligible to be smaller reporting companies (SRCs) and the start of the fiscal year beginning after December 15, 2024, for other entities. Early adoption of the guidance is permitted.

For contracts in force as of the transition date, best estimate cash flow assumptions are required as of the transition date and as of the end of any reporting period presented in the financial statements at the effective date for the company of ASU 2018-12. For contracts issued after the transition date but before the effective date, best estimate assumptions are required as of the end

of any reporting presented in the financial statements prepared at the effective date of ASU 2018-12.<sup>14</sup>

For contracts in force as of the transition date, the discount rate assumption depends on the transition method. Where modified retrospective transition is applied, the existing discount rate is maintained for purposes of calculating the net premium ratio and reserve impact reflected in net income (ASC 944-40-65-2 d. 1). Where full retrospective is elected, as discussed in ASC 944-40-65-2i(1) the upper medium grade fixed-income instrument yield as of contract inception is needed for all cohorts to which the retrospective transition applies, and earlier cohorts continue to apply the existing discount rates. Contracts issued after the transition date use the upper-medium grade fixed-income instrument yield applicable to the cohort in which they reside based on the open period of the cohort (ASC 944-40-30-9). All contracts reflect the change in present values due to the updated discount rate at each date presented in the financial statements in other comprehensive income (ASC 944-40-35-6A b. 1).

***Q 2.4: How should actual cash flows be incorporated upon transition to ASU 2018-12?***

A: In implementing the standard, a company needs actual experience from the transition date to the effective date.

Whether additional actual cash flow experience is needed depends upon the transition method elected. As noted in ASC 944-40-65-2e(2) the retrospective election should be made at the same contract issue year level for both the LFPB and DAC for that contract issue year and all subsequent contract issue years, on an entity-wide basis (applied to all contracts and product types).

As described in ASC 944-40-65-2i(3) and 2j, when retrospective transition is applied a cumulative catch-up adjustment to the opening balance of retained earnings as of the transition date equal to the difference between the carrying value of the LFPB (adjusted for the removal of any related amounts in accumulated other comprehensive income (AOCI)) and the LFPB balance calculated using the updated net premiums; and the LFPB balance using the interest accretion rate and the current discount rate should be compared with any difference in the balance recorded to AOCI. These adjustments require the use of actual, historical cash flows.

If a company elects the full retrospective transition as described in ASC 944-40-65-2(e) for any of its business, then actual cash flows are needed for all years since issue of the business subject to this election. ASC 944-40-65-2(e)(3) states, “Estimates of historical experience information shall not be substituted for actual historical experience information.” Modified retrospective transition does not require actual cash flows prior to the transition date and only depends on the reserves recorded at the transition date for subsequent measurement. In other words, the

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<sup>14</sup> At the time of publication, issues related to assumptions for business issued between the transition date and the effective date of ASU 2018-12 are currently under discussion at the Insurance Experts Panel of the AICPA. The outcome of these deliberations could impact components of this answer.



availability of historical actual data may affect the decision on which transition method is permitted.

***Q 2.5: How frequently should assumptions be reviewed?***

A: ASC 944-40-35-5 states, “Cash flow assumptions (that is, the assumptions used to derive estimated cash flows, including the mortality, morbidity, termination, and expense assumptions referenced in paragraphs 944-40-30-11 through 30-15) shall be reviewed—and if there is a change, updated—on an annual basis, at the same time every year.”

Each of the cash flow assumptions should be evaluated at least annually at the same time each year.<sup>15</sup> The guidance does not prohibit more frequent assumption review (see question 2.6). A change to cash flow assumptions is only made if justified by the analysis from the review. The assumptions do not have to be evaluated at the same time across all products and cohorts. However, if during an annual review a company determines that an assumption update is required for one cohort of business, the company must evaluate whether this indicates that assumptions for cohorts of business with similar characteristics should be updated as well, even if it is not concurrent with its scheduled annual review.

In addition, the FASB has indicated during discussion and deliberations that substitution of actual experience for expected when updating the net premium ratio is considered to be part of the assumption update process. Simply updating the reserve for actual in force—without updating the net premium ratio—is not an assumption update. Assumption review is therefore needed whenever the net premium ratio is updated for actual experience in order to reaffirm that the existing assumptions are appropriate or to update them if necessary. Similarly, if any assumptions are updated in the determination of the net premium ratio for reserves, actual experience must be reflected to the valuation date. The guidance does not specify the level of assumption review required when substituting actual experience for expected, but it is not expected that a fully rigorous review supported by experience studies be performed each reporting period.

***Q 2.6: Do all assumptions for all cohorts and lines of business need to be updated at the same time every year, or can different assumptions and groups of cohorts be reviewed and updated on different time schedules?***

A: ASC 944-40-35-5 states that “Cash flow assumptions...shall be reviewed—and if there is a change, updated—on an annual basis, at the same time every year.” (See question 2.3)

ASC 944-40-35-5 seeks to balance two competing objectives. One objective is to inform users of the financial statements that, at least once every year, all assumptions used in calculating the

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<sup>15</sup> Appendix G of *The AICPA Audit and Accounting Guide—Life and Health Insurance Entities* contains useful information related to the timing of assumption updates in the section, “Updating Cash Flow Assumptions in the Net Premium Ratio.”

aggregate liability for future policy benefits have been reviewed and are judged to be appropriate. Another objective is to update the liability whenever “evidence suggests that cash flow assumptions should be revised” (ASC 944-40-35-5(a)(1)).

To balance the workload for more efficient use of resources, many companies spread the performance of extensive experience studies over different times throughout the year for different cohorts or different assumptions. There is nothing in the standard to prohibit such resource planning. Even so, the requirement is to complete a comprehensive assumption review for each cohort “on an annual basis, at the same time every year” (ASC 944-40-35-5(a)).

Different cohorts may be reviewed at different times as long as all assumptions for each cohort are reviewed at the same time. As discussed in more detail in the answer to Q 2.5, there must be at least one time each year at which every assumption used within a cohort of business is current.

***Q 2.7: When should actual experience be substituted for expected?***

A: ASC 944-40-35-6 states, “The liability for future policy benefits shall then be updated for actual experience at least on an annual basis...,” and “[a]n insurance entity need not update the liability for future policy benefits for actual experience more often than on an annual basis, unless cash flow assumptions are updated.”

These references to annual updates do not mean that an actuary must base interim reserves on expected contracts in force rather than actual contracts in force. Reserves are always based on actual in force. The concern here is when to update the net premium ratio.

Thus, actual experience must replace expected at least annually during the assumption review (and update) process, and at any other time when an assumption is changed. Companies may update for actual cash flows more frequently, such as at each reporting period. See question 2.10 for an example and question 2.6 for the effect of such updates on assumption review requirements.

***Q 2.8: What might trigger an assumption update outside of the routine annual review period?***

A: ASC 944-40-35-5(a)(1.) states, “Cash flow assumptions shall be updated in interim reporting periods if evidence suggests that cash flow assumptions should be revised.” If cash flow assumptions are updated at an interim period, then actual experience should be updated in the liability calculation as well.

This implies that actual experience and significant events are monitored throughout the reporting cycle. Assumption changes outside of the normal review cycle are likely to be infrequent because normally it takes several periods of observed experience to update an assumption which would have been considered as current at the most recent assumption review date. Some considerations in determining whether an interim update is needed are:

- Large deviations in experience from expected, allowing for whether the event in question is credible and/or explainable.
- An unusual interest rate or economic environment that could have an impact on surrender rates.
- Unanticipated major one-time event that impacts future assumptions (pandemic, regulatory changes, etc.).

In addition, as discussed in the answer to Q 2.5, if assumptions for different cohorts are updated at different times during the year and an assumption is updated in one cohort, this may be an indication that the same assumption should be updated in other cohorts of contracts with similar characteristics, even if it is not time for the regularly scheduled annual assumption update for such other cohorts.

***Q 2.9: How do assumption changes done outside of the routine annual review period affect the rest of the review cycle?***

If an *ad hoc* study leads an actuary to conclude that cash flow assumptions are to be revised before the normal annual review period, then all assumptions for the affected cohorts are reviewed so that the resulting liability represents the company’s current best estimate.

Whenever a company updates an assumption for a cohort, it may be useful to review the assumptions for all cohorts within the same aggregated rollforward in order to enhance the consistency in reporting. For example, when a company updates the mortality assumption for a legacy term product, a review of all material assumptions used for the legacy term product and for the non-legacy term product may enhance the consistency of presentation if they will be disclosed together in the same rollforward.

An off-cycle assumption change would not alter the timing of the normal annual assumption review cycle.

***Q 2.10: How should the revised reserve and charge or credit to net income be calculated?***

A: ASC 944-40-35-6A(a) states, “An insurance entity shall update its estimate of cash flows expected over the entire life of a group of contracts using actual historical experience and updated future cash flow assumptions.” The revised cash flow streams are used to calculate a revised net premium ratio as of the inception date of the cohort using the original, locked in discount rate applicable for that cohort. This net premium ratio is applied to the new projected cash flow stream to calculate the new liability as the present value of benefits less the present value of net premiums as of the valuation date.

With respect to calculating the charge to net income, called the “remeasurement gain or loss,” ASC 944-40-35-6A(a)(1.) states, “(t)he revised net premiums shall be used to derive an updated

liability for future policy benefits as of the beginning of the current reporting period, discounted at the original (that is, contract issuance) discount rate. The updated liability for future policy benefits as of the beginning of the current reporting period shall then be compared with the carrying amount of the liability as of that date (that is, before the updating of cash flow assumptions) to determine the current period change in liability estimate (that is, the liability remeasurement gain or loss) to be recognized in net income for the current reporting period.”

Other approaches to calculate the remeasurement amount, which do not require fully revaluing the reserve at the prior date, may be considered.

For example, when a company updates for actual experience, the effect of remeasurement can be determined without recalculating the liability as of the beginning of the period. This may be achieved by multiplying accumulated actual premium as of the beginning of the period by the difference between the most recent net premium ratio (from the prior period or from the last assumption change model) and the new net premium ratio (from the current end-of-period valuation model).

Another potential method is described in “Traditional Contract Analytics” in the December 2018 issue of *The Financial Reporter*. The article includes formulas to calculate remeasurement amounts directly from known deviations from expected cash flows and changes in present values together with other information available from the current and prior valuations.

These methods are both designed to be mathematically equivalent to the calculation described in ASC 944-40-35-6A(a). Of course, actuaries employing any method would convince themselves of consistency with the relevant guidance.

***Q 2.11: How does incorporating actual experience and updating assumptions impact financial results?***

A: For any given cohort, replacing the previously projected cash flows with actual experience in the reserve calculation moves the reserve in the opposite direction of the variance between actual experience and expected. This is because the actual experience increases the net premium ratio when actual claims exceed expectations (lowers the ratio when claims are lower), which then flows through the reserve formula (present value (PV) of benefits minus PV of net premiums). Assumption updates move the reserve in the same direction as the revised expectation. (e.g., an expectation of more claims in the future increase increases reserves because of the increase of the PV of benefits in the reserve formula). So higher actual claims produce a lower reserve, but higher expected (future) claims produce a higher reserve.

The extent of these effects depends heavily on the age of the cohort (unless the net premium ratio is capped at 100 percent, or the reserve is floored at zero). For any given magnitude of variance or change, new cohorts have proportionately large reserve adjustments for actual claim variances and proportionately small adjustments for assumption changes. The opposite is true for older

cohorts. The difference is found in the relative magnitudes of past and future premium when discounted to a common date.

In aggregate, the combined offset from experience updates in multiple reserve cohorts can be any proportion of the combined claim variances, even less than 0% or more than 100%. If, for example, claims were high on a new cohort and low by about the same amount on an old cohort, the aggregate claim variance would be near zero. Updating the net premium ratios, however, would produce a large offset on the new cohort and a small offset on the old. Depending on which cohort had the larger variance, the aggregate offset would be more than 100% or less than 0% of the aggregate claim variance.

In the absence of an assumption change, reserve offsets for actual experience accumulate if claims trend higher or lower than expected. If the mortality or morbidity assumption is later unlocked, then the reserve update substantially reverses the earlier offsets. Whether the amount of unlocking is greater or less than the accumulated offsets depends on whether the trend in actual experience is in the direction of divergence or convergence with the original assumption. Significant deviations from select assumptions, for example, tend to converge with an ultimate assumption and an assumption update will result in only partial reversal of accumulated offsets. Conversely, persistent deviation from a mortality improvement assumption tends to result in a divergent trend away from the original mortality assumption and an assumption update will be greater than a reversal of the accumulated offsets.

***Q 2.12: What are some considerations in determining whether assumptions should be updated?***

An important consideration when assessing potential assumption changes is to distinguish between trends in experience and random fluctuations as quickly as possible in order to limit the accumulated deferral of actual experience adjustments that must then be reversed when a trend is finally recognized and an assumption is updated. The techniques for making this distinction might vary depending on the sensitivity of different cohorts to the distinction. Some potential techniques are:

- The use of confidence intervals to distinguish random fluctuations in experience versus trends.
- Credibility weighting and use of industry data when volume is thin.
- Comparison of cohort-level experience to aggregate or secular experience.

Confidence intervals and credibility weighting may be most helpful for older products, where an assumption is based at least in part on a large amount of credible experience for the product or similar products of the same generation.

Comparison to aggregate or secular experience may be most helpful for newer products, where differences may signal an inconsistency between the new product experience and that of the

older products that formed the basis of the new product assumption. In contrast, a variance that is seen consistently across multiple cohorts or in secular data for the period may be attributed to unusual (random) circumstances, such as an especially severe influenza season.

Within the requirements of the standard and as discussed in the answer to Q 2.5, the insurer has some flexibility to choose the frequency and timing of updates for actual experience. As noted in the example above, interim reserve changes from experience updates could potentially be reversed if assumptions are updated later. In all cases, sound actuarial judgment should be applied.

***Q 2.13: Can assumption reviews and the setting of assumptions be performed across multiple, calculation level cohorts?***

A: Yes. ASC 944-40-30-7 states, “In determining the level of aggregation at which reserves are calculated, an insurance entity shall not group contracts together from different issue years but shall group contracts into quarterly or annual groups.” This guidance applies to the level at which reserves are calculated. ASU 2018-12 sets new standards for cash flow assumptions (current without provision for adverse deviation) but does not change how those assumptions are determined. For that, we look to Actuarial Standards of Practice (ASOPs) (in the U.S.) or to other applicable actuarial standards. For most insurers and products, the calculation level cohorts are likely too small for meaningful experience analysis. Therefore, combining calculation cohorts for assumption setting and review may be an acceptable practice.

***Q 2.14: Can assumptions vary for different calculation-level cohorts within a block of business?***

A: Yes. There is nothing that prohibits assumptions to vary across cohorts, provided the differences are justified. ASOP No. 10, paragraph 3.3, which provides guidance regarding the use of best-estimate assumptions, states, “In instances where GAAP requires best-estimate assumptions, the actuary should use assumptions that reflect management’s assessment of emerging experience without provisions for risk or uncertainty. Where there is no emerging experience, the actuary should use assumptions that reflect management’s expectations of how experience will emerge.”

Differences in assumptions between cohorts are typically supported by experience study data and/or distinctions that justify different expectations. One example may be different assumptions for newer issue cohorts without extensive experience data vs. older, more established cohorts of the same type of policies. Still, whenever assumptions are changed for a particular cohort, actuaries would consider whether such changes are also needed for other cohorts with similar characteristics, even if such changes do not align with the annual assumption review cycle for those cohorts.

***Q 2.15: How can the treatment of expense assumptions differ from the other assumptions?***

A: ASC 944-40-35-5(a)(2) states, “An insurance entity may make an entity-wide election not to update the expense assumption referenced in paragraph 944-40-30-15.”

The guidance recognizes that a regular process of allocating expenses to contracts can be subjective, costly, and time-consuming, yet be much less significant to the reserve calculation than other assumptions. Therefore, the guidance permits an insurance entity to determine an expense assumption at the inception of a cohort, or group of cohorts, and then use the resulting assumed expense cash flows in all subsequent valuations, provided the entity makes an entity-wide election not to update.

***Q 2.16: What types of expenses are included in the reserve?***

A: ASC 944-40-30-15 states, “Expense assumptions used in estimating the liability for future policy benefits shall be based on estimates of expected non-level costs, such as termination or settlement costs, and costs after the premium-paying period. Renewal expense assumptions shall consider the possible effect of inflation on those expenses. However, expense assumptions shall not include acquisition costs or any costs that are required to be charged to expense as incurred, such as those relating to investments, general administration, policy maintenance costs....”

The above guidance states that only non-level costs and those after the premium-paying period are included and mentions termination and settlement costs as some that are included. Routine policy maintenance costs are excluded. This suggests that only benefit-payment-related expenses are to be included. Section 944-40-25-11 states, “The liability for future policy benefits represents the present value of future benefits to be paid to or on behalf of policyholders and *certain related expenses* less the present value of future net premiums receivable under the insurance contracts.” Claim settlement costs such as expenses incurred in the investigation and payment of death claims are common examples of what might be included.

The exclusion of policy maintenance brings into question what is meant by the inclusion of expenses after the premium-paying period. One possible meaning is that when the cessation of premium payment activity makes necessary additional monitoring activity to determine if the insured remains alive, this additional expense could perhaps be considered related to the payment of benefits.

This differs from a common practice under existing U.S. GAAP guidance of including all inflation-sensitive expenses as “non-level” in the reserve calculations. The effect of inflation must be considered in setting assumptions, but not in determining whether a cost is non-level.

***Q 2.17: If the expense assumption is locked-in, do actual expense cash flows need to be substituted for expected?***

A: No, the election is whether to update the net premium ratio for changes in the expense assumption. Since update for actual experience is considered part of the assumption update process, the election applies to both actual expenses and the expense assumption used in cash flow projections. A company makes the same choice for both, and the choice applies across all products.

***Q 2.18: What methods can be used to demonstrate that actual cash flows used in the reserve calculation represent the results of the entity?***

A: The requirement to use “actual” cash flows in net premium calculations may raise questions not directly addressed in the guidance as to the source of information and the allocation of items not directly tied to cohorts of policies. Generally speaking, the term “actual” relates to items recorded on the financial statements in the period in question and should be obtainable from the general ledger. This definition may include estimates of items, like incurred but not reported (IBNR), that are continually revised as cash flow experience emerges. Still, methods are needed to allocate amounts that are not recorded at a level that can be tied directly to individual cohorts. In addition, certain timing and claim dispute processes, for example, may need to be considered in determining the appropriate “actual” to be included in cohort-level updates.

The amount, level of detail, and types of actual cash flow data available vary among insurance entities, so defining actual amounts at the cohort level may require judgment. Some cash flows are generally available at a detailed level, so benefit payments and premium payments, for example, can be exact. Others are not, so expenses or adjustments for IBNR liabilities for example, need to be allocated and will require a consistent company procedure.

Each entity will need to develop its own specific procedures to perform this demonstration.

If a company has corresponding practices currently in use, perhaps for the amortization of DAC balances in proportion to estimated gross profits on universal life-type contracts or the calculation of liabilities in proportion to contract assessments for certain insurance benefit features, these could provide an appropriate framework.

***Q 2.19: When the net premium ratio is capped at transition, does the original reserve or the increased reserve carry forward for subsequent remeasurement?***

A: [At time of publication, the Insurance Experts Panel of the AICPA is currently discussing issues related to this question that could substantially impact the answer provided. Therefore, the answer to this question is not provided, pending further deliberations and direction from the AICPA.]



***Q 2.20: How are other liabilities, such as claims incurred but not reported (IBNR) or claims in course of settlement (ICOS), handled at transition?<sup>16</sup>***

A: When associated with traditional contracts for which a liability for future policy benefits is calculated, cash flows that form the basis for other liabilities such as IBNR and ICOS are considered as part of the unified cash flow stream that is used to calculate the liability for future policy benefits. Consequently, such items must be considered in conjunction with all other contract liabilities and cash flows.

For products with long-tail claims, such as long-term care and disability income, ICOS and IBNR may depend more heavily on expected claim continuance than on amounts due and payable upon approval of a claim. Refer to the health insurance white paper for more information about the handling of liabilities for such products.

The cash flow projection for the calculation of the liability for future policy benefits at transition includes expected future payment of claims incurred prior to transition, and the existing liability for those claims needs to be included as part of the current reserve when calculating the net premium ratio at transition.

Key to this concept is consistency between cash flow projections at transition and liabilities carried forward in the net premium ratio calculation. Where past due cash flows (i.e., cash flows that were due but not paid prior to transition) are included in the projection, the corresponding liability is included in the transition net premium ratio calculation. If past due cash flows are not included in the projection, the corresponding liability is excluded from the transition net premium ratio calculation. In such a case, care must be taken to align the discount rate used to establish the liability to be consistent with the discount rate used to calculate the liability for future policy benefits. Though different approaches may be taken, they all must arrive at the same total liability, and the same allocation between amounts recorded in retained earnings and AOCI, as a unified calculation under which the liability is calculated considering all cash flows associated with the contract. Companies have the choice of whether to deconstruct the liability into component pieces (e.g., reporting IBNR separately) but the total liability must be the same.

The same logic applies to other liabilities and assets (such as unpaid premiums) for cash flows that were due but unpaid at transition.

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<sup>16</sup> Appendix G of *The AICPA Audit and Accounting Guide—Life and Health Insurance Entities* contains useful information related to the incorporation of claim liabilities within the ASU 2018-12 measurement model in the section “Claim Liabilities Associated with Long-Duration Traditional Insurance Contracts.”

### **III. Discount rate assumptions**

#### ***Q 3.1. What interest rate is used to discount a liability for future policy benefits (FPB)?***

A: Financial Accounting Standards Board (FASB) Accounting Standard Codification (ASC) Paragraph 944-40-30-9 specifies that “the liability for future policy benefits shall be discounted using an upper-medium grade (low-credit-risk) fixed-income instrument yield.” Paragraph BC60 of the Basis for Conclusions to FASB Accounting Standard Update (ASU) 2018-12 states that the term, “upper-medium grade (low-credit-risk) fixed-income instrument yield,” is generally interpreted to mean a single-A credit rating.

#### ***Q 3.2. Is the discount rate a single rate or a yield curve?***

A: Topic 944 does not specify whether the discount rate is a single rate or a yield curve. Paragraph 944-40-30-9 states that the discount rate should “(reflect) the duration characteristics of the liability.” Use of a full discount rate curve presumably satisfies the requirement since the cash flow at each duration would be discounted at a rate that is appropriate for that duration. It might also be acceptable to discount all liability cashflows at a single rate, for example the A-rate which reflects the average duration of the liability, but it is prudent for care to be taken to ensure that use of a single rate adequately incorporates the duration characteristics of the liability cash flows.

#### ***Q 3.3. If the discount rate is a single-A rate, which single-A rate should be used?***

A: Topic 944 does not specify which single-A rate should be used. Multiple ratings services might publish single-A yield curves, and there could be several single-A curves. Because ASU 2018-12 does not specify which of the several single-A possibilities to use, judgment is needed. However, using the same index from period to period, unless there is a good reason to change, would ensure consistency and comparability within the company.

There might be multiple rating subgroups within the “upper medium grade” classification. For example, A1, A2 and A3 could fit this definition. Again, there is no specific guidance as to whether the single-A rate used to discount the liability should be based only on “pure” A-rated bonds or some measure (e.g., average, median) that incorporates observed variations within medium upper grade subcategories, as long as the rate meets the definition.

Market observable information is available from various data sources, for example, Moody’s, Standard & Poor’s, Bloomberg, Barclays Live, Reuters, 144A Bond Index from Barclays. Companies should be consistent in the source used across the entity and from period to period.

Private placement single-A rated bonds can have different rates than publicly traded single-A bonds. The ASU does not explicitly prohibit incorporating yields observed on private placement bonds.

However, 944-40-30-9 states that “an insurance entity shall maximize the use of relevant observable inputs and minimize the use of unobservable inputs in determining the discount rate assumption.” This guidance incorporates criteria consistent with the guidance related to the use of observable information included in ASC 820 *Fair Value Measurement*. This means that all relevant, observable information must be considered in arriving at the rate used. If the company incorporates private placement bond data in developing A-rates, the standard of observability must be met. Private securities, known as rule 144A securities, are market observable and are currently included in an AA curve used to discount pension liabilities.

***Q 3.4. What discount rates are assumed for points beyond the observable yield curve?***

A: Many insurance liabilities have cash flows that extend beyond the observable yield curve. For example, the observable single-A bond yield curve may extend for 30 years but insurance liabilities may have cash flows that go on for 60 years or more. This is directly an issue when a yield curve is used for discounting, but even if a single rate is used, paragraph 944-40-30-9 states that the discount rate needs to “[reflect] the duration characteristics of the liability.” So even if a single rate is used, rates beyond the observable yield curve will need to be considered.

Paragraph 944-40-55-13E provides some guidance on projecting the yield curve beyond the observable data. It states, “(i)n determining points on the yield curve for which there are limited or no observable market data for upper-medium-grade (low-credit-risk) fixed-income instruments, an insurance entity should use an estimate that is consistent with existing fair value measurement in Topic 820, particularly for a Level 3 fair value measurement.” Liquidity may be an additional lens through which to consider the market data cutoff point to the extent that it influences the relevance of the observable data for use in determining the yield curve. While in the U.S. this is less of a concern (observable and liquid periods are usually similar), this is particularly important for international economies (see Q 3.8.).

Paragraph 820-10-35-52 states that “Level 3 inputs are unobservable inputs for the asset or liability” and paragraph 820-10-35-53 states that “unobservable inputs shall reflect the assumptions that market participants would use when pricing the asset or liability, including assumptions about risk.” This suggests that for extending the discount curve beyond observable points, the objective is to estimate rates that a market participant would use in pricing instruments.

A yield curve can be represented either as a series of spot rates or as a series of forward rates. In extending a yield curve, one typically decides which representation to extend directly, with the awareness that the other representation is dependent upon it. If directly extending the spot rate curve, one might consider whether the associated forward rate curve is oddly shaped or difficult to explain in which case an alternative method might be

considered. An approach to extending the yield curve is often characterized by three choices. These are: 1) a value for the ultimate long-term projected rate, 2) the duration at which the ultimate projected rate starts to apply, and 3) a method of interpolation between the last observable liquid rate and the ultimate long-term rate. There are many ways to make these choices.

The simplest approach is to keep the rate at the last observable liquid point constant, that is, by applying the last observable liquid rate (whether spot or forward) to all cash flows beyond that point. This last liquid point approach has an advantage of being simple and requiring few assumptions to be made. It sets the duration at which the ultimate projected rate starts to be the last observable liquid point and eliminates the need for any interpolation. But the last liquid point approach also has disadvantages.

The resulting rate might not be deemed to be a realistic long-term assumption. And the key rate duration at the last liquid point will be very high; that is the liability valuation will be very sensitive to small changes in the last liquid rate, since it will apply to all cash flows at that point and beyond.

The sensitivity of the valuation to small changes in the last liquid rate can be reduced by specifying an ultimate rate that is stable from one valuation to the next. The ultimate rate starts to apply well beyond the duration of the last observable rate and points on the yield curve between the last observable rate and the ultimate rate are determined through some form of interpolation. If this approach is used, assumptions are needed to set the ultimate rate and the duration at which it is reached. The approach used to grade from the last observable rate to the ultimate rate also needs to be selected. For example, if observable rates are available through 30 years, one option would be to grade from the 30-year rate to the ultimate rate assumption linearly over 20 years. Then the ultimate rate would be used for cash flows 50 or more years out. Of course, linear interpolation over 20 years is not the only possible approach. A different grading method could be used, or the grading period for linear interpolation can be adjusted based on the results/grading mechanics achieved by other grading methods prescribed by other frameworks. For example, the Smith-Wilson method is commonly used for Solvency II purposes and might be considered as a viable alternative here as well, or as a useful benchmark to validate a simpler technique.

Some factors that could be used to help guide the choice of an ultimate rate include:

- Historical nominal risk free and upper medium grade interest rates
- Historical real risk free and upper medium grade interest rates
- Current levels of nominal and real interest rates
- Current and historical long-term inflation expectations

- Current and historical spreads between risk free and upper medium grade interest rates
- Banker, economist, investment professional surveys
- Decisions by regulatory bodies such as the IAIS in extending the yield curve for regulatory purposes
- Data from internal or external deals

In some instances, the derivatives market can provide some information to help guide choices of unobservable long-term rates. For example, there may be very long-term rates implicit in some swap contracts. Such information needs to be used with care, however, since such derivatives may not trade in liquid markets and the terms of the derivatives may obscure the true, long-term interest rate that is implied. Also, derivatives generally trade based on risk-free rates, rather than upper-medium grade rates.

The International Actuarial Association (IAA) sponsored a book *Discount Rates in Financial Reporting: A Practical Guide*, authored by Milliman, Inc. which is a resource on the topic of discount rates. Actuaries may find this book to be a useful resource for discount rates considerations. However, because it was not written specifically as a resource for U.S. GAAP, care should be taken to ensure that ideas suggested therein comply with U.S. GAAP guidance.

***Q 3.5. Is there a difference between the discount rate used to accrete interest on the liabilities for the income statement and the discount rate used to determine the value of liabilities on the balance sheet? What rates should be locked in as the interest accretion rate used to determine interest credited and net income?***

A: Paragraph 944-40-35-6A (b) states that for measurement of the insurance liability subsequent to recognition:

Net premiums shall not be updated for discount rate assumption changes.

1. The difference between the updated carrying amount of the liability for future policy benefits (that is, the present value of future benefits and expenses less the present value of future net premiums based on updated cash flow assumptions) measured using the updated discount rate assumption and the original discount rate assumption shall be recognized directly to other comprehensive income (that is, on an immediate basis).
2. The interest accretion rate shall remain the original discount rate used at contract issue date.

Thus, the liability is calculated twice: once at the current discount rate (or discount rate curve) and once at the original discount rate (or discount rate curve). The original discount rate is

used to determine interest accretion of the liability, which is included in net income, while the impact of remeasurement from the original, locked-in discount rate to the current discount rate is reported in accumulated other comprehensive income. So, the original discount rate is “locked in” at contract inception for use in determining future net income related to that contract.

***Q 3.6. What rate is locked in as the interest rate used to determine interest accretion and net income?***

A: Topic 944 does not provide any guidance on how to lock in the interest accretion rate. First, consider the case of business that is newly issued after the transition date (see Q 3.7 of this section for issues related to existing business at transition). If a single discount rate (i.e., not a curve of rates) were used to determine the initial liability, for example if an A-rate reflecting the weighted average duration of the liability were used, then that rate could be locked in<sup>17</sup>. If a yield curve were used to discount the initial liability, there are a number of options that are considered for locking in that curve, including:

1. Locking in the forward rate curve consistent with the initial discount curve. In future periods, the curve is shortened by dropping off the initial forward rates for periods that have passed. This has the effect of changing the spot rates.
2. Locking in the spot rate curve consistent with the initial discount curve. In future periods, the discount rate associated with a cash flow projected to occur on any particular date in the future is unchanged. The curve is shortened by dropping off the spot rates for periods that have passed. This has the effect of changing the forward rates.
3. Locking in a single effective yield that equates the initial liability (i.e., zero, unless the net premium ratio is capped at 100%) to the present value of projected benefits minus the present value of projected net premiums at contract inception. The single effective yield determined at contract inception is consistent with the fact that there is no accumulated other comprehensive income (AOCI) adjustment at issue.

Each of these options has advantages and disadvantages. Forward curves are used in the theory of risk-neutral market-consistent valuation. But the interest accretion rate is an amortized cost concept which is inherently inconsistent with pricing in the financial market. In an economic environment with a typically upward sloping yield curve, locking in the forward curve will typically result in less interest accretion to the liability (and thus more net income) in the early years and higher interest accretion (and thus less net income) in the later

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<sup>17</sup> At time of publication, issues related to the use of a single discount rate for subsequent measurement are under discussion at the Insurance Experts Panel of the AICPA. The issues under discussion will be identified in *Targeted Improvements to Long-Duration Contracts Implementation Issue #6*. The outcome of these deliberations could impact components of this answer.

years, compared with the other approaches.

Locking in a spot curve is less of a concern with an amortized cost calculation since amortized cost is inherently inconsistent with current prices. Spot curves may produce a better match with net investment income from fixed income assets backing the liability, especially if a laddered investment strategy is used.

A locked-in, single effective yield averages the yield curve over all cash flows and produces a single rate that can be locked in. Were one to calculate a theoretical adjustment to AOCI at inception under such a method the adjustment would be zero, thus maintaining conceptual consistency with the fact that no adjustment is allowed at inception. Some practitioners find the locking-in of a single rate as attractive due to its apparent simplicity (i.e., only one rate needs to be tracked per cohort). Others find it to be less precise than other methods because it assigns the same discount rate to all cash flows irrespective of duration.

Locking in a single rate or a spot rate curve generally, though not always, produces more levelized interest accretion than locking in the forward rates. In a normally sloped yield curve environment, locking in a forward rate path will result in lower interest accretion (slower growth in the liability) in the early years as the liability interest accretions follow the upward sloping forward curve.

The potential for slower accretion of interest to the liability in the early years can be viewed as a desirable attribute of locking in the forward rates. However, other considerations could impact the decision as well. When the yield curve does not follow a smooth, upwardly sloped pattern, forward rates can exhibit large fluctuations from period to period, and may become negative for a time, resulting in similar, volatile accretions of interest. In addition, practitioners may want to consider the accounting treatments of assets to see how well they align with the interest accretion patterns under the various lock-in practices for liability measurement.

If a forward curve or spot curve is locked in, it is important that the curve be applied consistently in future years. For example, if a spot curve is locked in, when calculating interest accretion as of the end of policy year 3, cash flows one year out (i.e., occurring at the end of policy year 4) would be discounted at what was originally the year 4 spot rate, not the original year 1 spot rate.

A disadvantage of the single rate approach is that it might require some additional work to determine the effective yield at issue, essentially an internal rate of return calculation. For contracts that have cash inflows for a long period of time prior to the payment of benefits, the leverage created by the initial negative cash flows could produce high effective yields.

For example, assume a 5-year contract with the following parameters:

	1	2	3	4	5
Expected Premium (BOY)	1000	1000	1000	1000	1000
Expected Benefit (EOY)	0	0	0	0	4500
Discount Curve Spot Rate	2.0%	2.2%	2.4%	2.6%	3.0%
Discount Curve Forward Rate	2.0%	2.4%	2.8%	3.2%	4.6%

The initial liability for future policy benefits is zero with an initial ratio of net premiums to gross premiums of 81.35%. The effective yield that generates a starting reserve of zero using the same net premiums is 3.39%, which is higher than the highest spot rate on the discount curve, though not higher than the highest forward rate. This same phenomenon can be observed when locking in spot rates; the positive cash inflows in the early years, to which lower discount rates are applied, leverages the overall rate of interest accretion on the liability.

***Q 3.7. Are there other methods that might be considered for locking in the interest rate used for interest accretion and net income?***

A: The guidance is not prescriptive so other methods could be considered. However, in assessing other methods, one might consider whether the method accretes the initial, discounted value of individual cash flows to the nominal cash flow amount at the point at which it occurs. All three methods described in Q 3.6 share this characteristic, though for the single effective yield method, this outcome is observed only if cash flows exactly match projected cash flows at issue. The result of adhering to an approach with this characteristic is that it eliminates from net income the reporting of any movements in liability values occurring from movements in interest rates. This aligns with the guidance, relegating such changes to other comprehensive income instead.

Adherence to this accretion criterion eliminates other ways of locking in discount rates that may have been considered. For example, were one to lock-in a static yield (i.e., one that applies the same discount rate at each future measurement date to cash flows of a given nominal duration from the measurement date), the method would not accrete the discounted cash flows at issue to the amounts projected to be paid.



***Q 3.8. If a cohort contains contracts issued over many dates, how is the locked in interest accretion rate determined?<sup>18</sup>***

A: ASU 2018-12 does not prescribe the timing of locking-in the discount rate, or rates, for new business for net income. However, language within ASU 2018-12 provides indications that the discount rate, or rates, used should reflect the timing of when the contracts within the cohort were issued. 944-40-35-6A.a.1, for example, states that the revised net premium ratio used for remeasurement is based on “the original (that is, contract issuance) discount rate.” The connection is drawn between the time when the contract is written, not when the cohort is established. Keeping this concept in mind, there are options between a particular date within the time period spanned by the cohort or averaging techniques such that the principle of contract inception is achieved. For example, for operational efficiencies, the rate existing at the beginning of the cohort may be considered. However, if the rate at the beginning of the cohort does not adequately represent the rates existing when contracts were written during the entire period due to volume or rate changes during the course of the cohort period, an average covering multiple points within the period during which the cohort is open for new contracts may be considered instead. In practice, any method that relies on a single, observed rate or curve at a particular point in time might not align closely enough with the rates at the time when contracts were issued unless most contracts are issued in a compressed timeframe within the cohort, or if rates are particularly stable throughout the period.

In moving towards a method that reflects rates that cover the period when the cohort’s contracts are issued, daily curves could be averaged or representative points could be used. For example, if the cohort covers one quarter’s worth of sales, the discount curve may be an average of the mid-month curves. More points could be chosen to include in the average, depending on operational concerns. If sales during the quarter are relatively smooth, a pure average of the yield curves may work well. If sales are “lumpy,” a weighted average of yield curves (using sales volume as weights) could be considered.

Another alternative might be to lock in different curves for different subsets of sales. Using a quarterly cohort as an example, the first month’s sales could lock in the discount curve from the middle of month 1, the 2nd month’s sales could lock in the discount curve from the middle of month 2, and the 3rd month’s sales could lock in the discount curve from the middle of month 3. A single ratio of net premiums to gross premiums would apply across the cohort. This method has the advantage that the locked in interest accretion curve will be from a date relatively close to the date each contract was sold. At the extreme, individual discount rate curves could be locked-in daily to align with each contract’s issuance date.

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<sup>18</sup> At publication time, issues related to discount rates for subsequent measurement are under discussion at the Insurance Experts Panel of the AICPA. The issues under discussion will be identified in *Targeted Improvements to Long-Duration Contracts Implementation Issue #6*. The outcome of these deliberations could impact components of this answer.

This might be especially useful for institutional contracts, like pension risk transfers, where transactions are infrequent and are priced using market rates at the time of the transaction.

In any case, the method selected should be shown to be appropriate for the contracts in the cohort and the specific facts related to the timing of contract issuance within the cohort and the interest rate environment existing while it is open to new business.

***Q 3.9. What are considerations for the discount rate for in force business at transition when the retrospective approach is not elected?<sup>19</sup>***

A: Questions 3.1 to 3.8 treat aspects of discount rate guidance for business issued after the transition date. For business in force at transition, ASU 2018-12 requires that the discount rate originally locked-in at issue under current GAAP should be used as the accretion rate for income statement purposes. While these rates are well-defined at the individual policy level, it is possible that individual policies with different discount rates may be aggregated into a single cohort on transition.

ASU 2018-12 does not specify what to do in this case. Locking in the existing individual policy discount rates by policy would adhere to the letter of the guidance. Where this is impractical, it may be possible to determine an aggregate rate (or curve of rates) that represents an aggregation of the different rates previously applied to the individual policies in the cohort. Presumably, the resulting rate (or curve of rates) would have to reproduce the sum of the individual policy reserves of the cohort at transition and provide a materially similar value at each subsequent measurement date to be considered faithful to the transition guidance.

For those who apply different discount rates to different blocks of business within a cohort, the transition guidance would seem to require that the company retain the different interest rates in a manner similar to that applied to its new business going forward.

Whatever method is employed, the company should not generate an impact on retained earnings for changes in the discounting resulting on transition to ASU 2018-12, since this is the effect of retaining current GAAP discount rates for in force business. In addition, in no case should the method of locking in the interest rates at transition for future application be changed. For example, it would be inappropriate to change a single-rate assumption into an equivalent yield curve of locked in spot rates or forward rates even if a company intends to lock in discount rate curves for new business.

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<sup>19</sup> At the time of publication, issues related to discount rates at transition are currently under discussion at the Insurance Experts Panel of the AICPA. The issues under discussion will be identified in *Targeted Improvements to Long-Duration Contracts Implementation Issue #6*. The outcome of these deliberations could impact components of this answer.

***Q 3.10. What discount rate should be used to discount cash flows of products that are denominated in foreign currencies?<sup>20</sup>***

A: If a company issues products that are denominated in currencies other than USD, the company will likely need to discount cash flows using discount rates appropriate for the economy of that currency, consistent with the guidance in ASC 830, *Foreign Currency Matters*. The ASU 2018-12 requirements in 944-40-30-9 quoted in earlier answers of this section still apply. Therefore, such discount rates need to be “upper medium grade,” based on sources that “maximize the use of relevant observable inputs and minimize the use of unobservable inputs,” and “[reflect] the duration characteristics of the liability.” The remainder of this answer addresses specific challenges in developing such rates from data available in foreign economies.

Few economies have the depth and liquidity in fixed income securities as the U.S. markets. It may be necessary to consider the frequency, transparency, and orderliness of trading in certain maturities.

Single-A rates might exist at longer tenors (and occasionally at intermediate points) but trade at low volumes that are not considered reliable. Consistent with the principles outlined in ASC 820, such publicly available data at those maturities cannot be ignored, but its lack of reliability may make it less relevant than other, more reliable sources and therefore its use in determining discount rates may be limited. The term “LLP” (last liquid point) is used to indicate the longest maturity at which a class of securities is traded frequently enough to yield reliable data. Observable single-A rates where liquid will generally serve as the most relevant source of data.

In some economies, nongovernment fixed-income securities might be observable only within a shorter range of maturities than government securities. Suppose, for example, there are observable and liquid single-A rates available through 20 years but observable and liquid risk-free rates available through 30 years. In this case, it could be possible to use the longer-term observable risk-free rates by adding an assumed spread to the risk-free rates at those periods. This spread can be taken from the longest observable upper medium grade rate, or the spread can grade to a long-term assumption.

For example, assume observable rates on government securities are available through 30 years and observable upper medium grade rates though 20 years. The 20-year government rate is 4%, the 30-year government rate is 4.5% and the 20-year upper medium grade rate is 5%. One approach would be to apply the 1% spread at 20 years to years 21-30. In this case, the assumed

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<sup>20</sup> At the time of publication issues related to products denominate in foreign currencies are currently under discussion at the Insurance Experts Panel of the AICPA. The issues under discussion will be identified in *Targeted Improvements to Long-Duration Contracts Implementation Issue #6*. The outcome of these deliberations could impact components of this answer.

30-year upper medium grade rate would be  $4.5\% + 1\% = 5.5\%$ . Alternatively, there might be evidence that a valid long term spread assumption is 1.5%. In this case, the spreads applied to the observable government rates in years 21 through 30 could grade from the 1% in year 20 to 1.5% in year 30. The assumed 30-year upper medium grade rate would be  $4.5\% + 1.5\% = 6\%$ .

In determining the quality of a foreign fixed income security or index of such securities, one interpretation is that a global equivalent scale should be used so that upper medium grade is consistent with the definition used in the U.S. In many economies, local agencies provide ratings of fixed income securities issued in those economies. These local agencies often use scales that are systematically different (usually higher) than ratings that a global rating agency might give the same security on a global equivalent basis. The local ratings, however, tend to cover the securities more comprehensively than global rating agencies. If local ratings are used as a source of rate observations, it might be appropriate to consider notching the ratings to be consistent with the global ratings. The notching could be based on comparing the local and global ratings where that is possible.

The government securities of a foreign economy are rated to reflect the “sovereign risk” of that economy. Global equivalent ratings of nongovernment securities tend to be no higher than the sovereign ratings of government securities within that economy.

In economies whose government securities are rated A or higher and have liquid public securities with global equivalent A or higher in some maturities, the same general approach as described in the Q 3.3 can be used to develop the observable portion of a A-discount rate curve, as for example in the following algorithm:

1. The government securities could be used to construct a curve up until the LLP for those securities.
2. Spreads of public corporate debt securities with global equivalent rating of A could be added up to the last LLP applicable to those securities.
3. If the LLP in 2) is less than 1), as is often the case in foreign economies, the corporate spreads could be extrapolated to the end of the LLP of the government securities. (In this case, the observable portion of the curve corresponding to question 3 is partially extrapolated using unobservable data).

Once the observable portion of the A-curve is constructed, the techniques outlined in question 5 (ultimate forward or ultimate spot approach) may be used to extend the single-A curve to unobservable maturities.

If government securities are rated higher than single-A, but the corporate security market is not deep enough to support global equivalent spreads equivalent to single-A, one response might be to develop a spread over governments based on the U.S. economy, for example taking the ratio

of U.S. A-rates to U.S. government securities. To better reflect the sovereign rating of the economy, a ratio adjustment that incorporates the sovereign debt rating of the country could be considered. For example, if the sovereign debt is rated AA, the spread adjustment could be  $[(\text{US Treasury} + \text{US A spread})/(\text{US Treasury} + \text{US AA spread}) - 1] \times \text{sovereign debt rate}$ .

If government securities are rated less than single-A, there might be no debt securities in the economy rated A on a global basis. One approach to deriving a single-A rate entails adjusting observable government rates with a negative spread that produces a global equivalent single-A rate. This could be done using the ratio approach outlined in the previous paragraph. Some actuaries believe that the appropriate discount rates in this situation are the highest quality fixed income rates available in the economy (e.g., the government rates). The appeal of its simplicity notwithstanding, this position may conflict with the provisions of ASC 820 which require the use of observable information and adjustment for other considerations, if necessary, to arrive at an upper-medium fixed income yield, even if the necessary adjustments must be estimated because observable information regarding the adjustments is not available.

In working out how to develop rates in a foreign economy, one source to consider for potential approaches is pension accounting. Under U.S. GAAP, pension liabilities are required to be discounted using a “high-quality” fixed instrument yield, which is usually interpreted as AA-rated debt instruments. So, pension liabilities also encounter this situation when the pension is denominated in a currency for which AA-rated instruments do not exist (or do not exist in a liquid market).

Another possibility is to look to swap rates in the relevant currency. If swap rates are regarded as being risk free or AA quality, a spread may need to be estimated to increase the discount rate from the AA swap to a single-A rate to be used for discounting the insurance liability.

For some currencies, government bonds might be rated single-A and some corporate bonds might also be rated single-A. There is no requirement in ASU 2018-12 that either prohibits or requires the government bond rates to be included in the yield curve used to discount the liabilities. If the corporate single-A bond rates include a spread over the government bond rates, some actuaries believe that this spread is more consistent with the characteristics of the insurance liability and so these actuaries generally believe it would be preferable to exclude the government bond rates from the insurance liability discount rate.