APPLICATION OF ASU 2018-12 TO THE ACCOUNTING FOR LONG-DURATION CONTRACTS UNDER US GAAP

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Agenda

1. *Introduction*
2. *Level of Aggregation*
3. *Discount Rate Assumptions*
4. *Limited-Payment Contracts*
5. *Q&A*

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LEVEL OF AGGREGATION

Selected Questions from AAA Whitepaper

Level of aggregation

- Overall level of aggregation
  - ***Q.1.1: What is the guidance regarding cohorts?***
  - ***Q.1.2: What other items could be considered when determining cohorts?***
  - ***Q.1.3: Once cohorts are established, can they be changed later?***

Overall level of aggregation

- 944-40-30-7: "…an insurance entity shall not group contracts together from different issue years but shall group contracts into quarterly or annual groups."
  - The annual issue year limitation applies both at transition and prospectively
- ASC 944-40-55-13H states that disclosure requirements related to DAC and LFPB should not be aggregated across reportable segments.
- Other considerations:
  - contracts should only be grouped with contracts sharing similar characteristics, e.g., how business is priced and managed, contract features
  - Competing drivers for cohorting lower than an issue year:
    - Transparency
    - Operational efficiency
    - Volatility
- Cohorts may not be changed once established

Product considerations

- ***Q 1.5: What are the product considerations when establishing a cohort?***
- ***Q 1.6: Can limited pay and lifetime pay policies be combined into one cohort?***
- ***Q 1.7: Can contracts with different expected durations be combined within a single cohort?***
- ***Q 1.8: Can products with different types of benefits be combined within a single cohort?***
- ***Q 1.9: Can products with different levels of profitability be combined?***

Product considerations

- No prescriptive guidance is provided to define a cohort, so consider principles that align with the underlying the guidance and GAAP in general.
- Product considerations can include (but not limited to):
  - Accounting model
  - Expected duration
  - Benefit type – e.g. mortality, morbidity, longevity
  - Profitability level
- Limited pay and lifetime pay policies cannot be combined into one cohort
- The following cohorting methods are not explicitly prohibited, but additional considerations must be assessed:
  - Combining contracts with different expected durations
  - Combining products with different types of benefits
  - Combining products with different profitability levels

Impacts of how 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)?

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

Impacts of how 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)?

- Level of aggregation not clearly defined in the ASU for groups of policies or insured lives within a contract, e.g.: Group LTC, assumed reinsurance, PRT
- Only prescriptive guidance is that no grouping of policies from different issue years
- For assumed reinsurance, additional complexity exists as to the date assigned to the underlying cash flows – impacts level of aggregation and locked in discount rate assigned to cash flows.
  - Accounting date – date the reinsurance contract was consummated
  - "Look through" approach – acknowledged as the one acceptable approach in the AICPA Audit and Accounting Guide
- For some long-duration group insurance contracts, individual policyholders might receive a certificate, which effectively turns it into an individual contract
- For PRT, lives are normally acquired at the same time – can be argued that all are one contract or are individual contracts.

Impacts of how business was acquired

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

- ASU is silent on the aggregation of assumed and direct business
- ASU is clear that the "issue year" of the assumed business is the year the business was assumed by the reinsurer. For example:
  - Inforce block of business originally sold between 2000 and 2020 by the cedant, assumed in 2020 by the reinsurer
  - The "issue year" for all policies from the reinsurer's perspective is 2020
  - If a company concludes that 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? *Yes*

Q 1.14: Can cohorts be bigger than an issue year? *No*

Q 1.15: Can an annual cohort be different than a calendar year? *Yes*

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DISCOUNT RATE ASSUMPTIONS

Selected Questions from AAA Whitepaper

Discount Rate Assumptions

Q 3.2: Is the discount rate a single rate or a yield curve?

- Topic 944 does not specify whether the discount rate is a single rate or a yield curve
- ASC 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

Discount Rate Assumptions

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

- ASC 944-40-55-13E provides some guidance on projecting the yield curve beyond the observable data….“In 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.
    - This is more important for international economies, as the observable and liquid periods are usually similar in the U.S.

Discount Rate Assumptions

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

- References from ASC 820 (i.e., ASC 820-10-35-52 and ASC 820-10-35-53) suggest 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
- Approaches to extending the yield curve are often characterized by three choices, including:
  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

Discount Rate Assumptions

Q 3.4: What discount rates are assumed for points beyond the observable yield curve? (cont.)

- Examples of approaches to extending the yield curve include the following, each with their own advantages and disadvantages:
  - Keeping the rate at the last observable liquid point constant (whether spot or forward)
  - Specifying an ultimate rate that begins well beyond the last observable rate, with points on the yield curve between the last observable rate and the ultimate rate being determined through some form of interpolation (e.g., linear interpolation, Smith-Wilson, Nelson-Siegel, etc.)
- If using an ultimate rate, there are many factors that could be used to help guide the choice, including (but not limited to):
  - Historical and current nominal and real risk free and upper medium grade interest rates, historical and current long-term inflation expectations, historical and current spreads between risk free and upper medium grade rates, investment professional surveys, etc.

Discount Rate Assumptions

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

- Topic 944 does not provide any guidance on how to lock in the interest accretion rate
- In the case of business that is newly issued after the transition date:
  - If a single discount rate (i.e., not a curve of rates) reflecting the weighted average duration of the liability was used to determine the initial liability, then that rate could be locked in.
  - If a yield curve was used to discount the initial liability, there are a number of options that are considered for locking in that curve, including:
    - Locking in the forward rate curve consistent with the initial discount curve
    - Locking in the spot rate curve consistent with the initial discount curve
    - 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 less the present value of the projected net premiums at contract inception, which is consistent with the fact that there is no AOCI adjustment at issue

Discount Rate Assumptions

Q 3.6: What rate is locked in as the interest rate used to determine interest accretion and net income? (cont.)

- Each of the options for locking in a yield curve has their own advantages and disadvantages, some of which include:
  - Forward rate curve
    - Used in the theory of risk-neutral market-consistent valuation, but the interest accretion rate is an amortized cost concept
    - In an upward sloping yield curve environment, 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 years, compared with the other approaches
    - 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

Discount Rate Assumptions

Q 3.6: What rate is locked in as the interest rate used to determine interest accretion and net income? (cont.)

- Each of the options for locking in a yield curve has their own advantages and disadvantages, some of which include:
  - Spot rate curve
    - Less of a concern with an amortized cost calculation, since amortized cost is inherently inconsistent with current prices
    - May produce a better match with net investment income from fixed-income assets backing the liability, especially if a laddered investment strategy is used
    - Consistent with a single effective yield, locking in a spot rate curve generally, though not always, produces more levelized interest accretion than locking in the forward rates

Discount Rate Assumptions

Q 3.6: What rate is locked in as the interest rate used to determine interest accretion and net income? (cont.)

- Each of the options for locking in a yield curve has their own advantages and disadvantages, some of which include:
  - Single effective yield
    - 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); however, some find it to be less precise than other methods because it assigns the same discount rate to all cash flows irrespective of duration
    - Might require some additional work to determine the effective yield at issue, which is 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
    - Consistent with a spot rate curve, locking in a single effective yield generally, though not always, produces more levelized interest accretion than locking in the forward rates

Discount Rate Assumptions

Q 3.8: If a cohort contains contracts issued over many dates, how is the locked in interest accretion rate determined?

- ASU 2018-12 does not prescribe the timing of locking-in the discount rate(s), for new business for net income; however, language within the ASU provides indications that the discount rate(s), used should reflect the timing of when the contracts within the cohort were issued, not when the cohort is established
- Since there is no prescribed technique, a variety of averaging techniques might be considered to achieve the principle of contract inception, including:
  - Using the rate(s) existing at the beginning of the cohort – This technique may not adequately represent the rates existing when contracts were written due to volume or rate changes during the course of the cohort period

Discount Rate Assumptions

Q 3.8: If a cohort contains contracts issued over many dates, how is the locked in interest accretion rate determined? (cont.)

- Since there is no prescribed technique, a variety of averaging techniques might be considered to achieve the principle of contract inception, including:
  - Using an average of rates covering multiple points within the period during which the cohort is open for new business
    - If sales during the period are relatively smooth, a pure average of the yield curves may work well; however, if sales are "lumpy," a weighted average of yield curves (using sales volume as weights) could be considered
  - Locking in different curves for different subsets of sales
    - For 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, and so on
  - At the extreme, individual discount rate curves could be locked-in daily to align with each contract's issuance date

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LIMITED-PAYMENT CONTRACTS

Selected Questions from AAA Whitepaper

FPB and DPL Updates for Experience and Assumption Changes

Q 5.2: What are the mechanics of updating the liability for future policy benefits and DPL for experience and assumption changes for limited-payment products?

Calculations for policies issued post-transition

At any valuation date, t:

- $FPB_t = PV_t(Future\ Benefits) - (NPR_t) \times PV_t(Future\ Gross\ Premiums)$
- $DPL_t = (DPL\ Amort\%_t) \times PV_t(Future\ Amort\ Basis) - (1 - NPR_t) \times PV_t(Future\ Gross\ Premiums)$
- $DPL\ Amort\%_t = \frac{PV_0(Premium) - PV_0(Benefits)}{PV_0(Amort\ Basis)}$
- $NPR_t = \frac{PV_0(Benefits)}{PV_0(Gross\ Premiums)}$

**In subsequent illustrations, the terms "Benefits" and "Claims" are used interchangeably, and each should be understood to also include associated claim costs.*

FPB and DPL Updates for Experience and Assumption Changes

FPB NPR[(a)]	90%
DPL Amort %[(c)]	0.042%
Discount Rate:	0%

Multi-Pay Issued After Transition; At-Issue Liability Calculations:

PV @ T=0	400	358	100,000		42

T	Premium	Claims	FPB_t[(b)]	Amort Basis	DPL_t[(d)]	Expected Earnings[(e)]
0			0		-	
1	80	29	43	10,000	4	4.2
2	80	33	82	10,000	8	4.2
3	80	36	117	10,000	13	4.2
4	80	36	153	10,000	17	4.2
5	80	36	188	10,000	21	4.2
6		36	152	10,000	17	4.2
7		38	114	10,000	13	4.2
8		38	76	10,000	8	4.2
9		38	38	10,000	4	4.2
10		38	0	10,000	-	4.2

(a) *FPB NPR = PV_0 (Claims)/PV_0 (Premiums) = 358/400 = 89.5%*

(b) *FPB_t = PV_t (Future Claims) - NPR X PV_t (Future Premiums)*

(c) *DPL Amort % = [PV_0 (Premiums) - PV_0 (Claims)]/PV_0 (Amort Basis)*
= (400 - 358)/100,000 = 0.042%

(d) *DPL_t = (DPL Amort %) X PV_t (Future Amort Basis)*
- (1-NPR) X PV_t (Future Premiums)

(e) $Earnings_t = Premium_t - Claims_t + (FPB_{t-1} - FPB_t) + (DPL_{t-1} - DPL_t)$

FPB and DPL Updates for Experience and Assumption Changes

FPB NPR	97.78%
DPL Amort %	0.009%
Discount Rate:	0%

Time 2 Liability Calculations: Experience updates and assumption change - mortality increase of 10%

PV @ T=0	400	391	100,000	9	Historical Transition to Projected

T	Premium	Claims	FPB_t	Amort Basis	DPL_t	Expected Earnings	FBP	DPL	Earnings
0			0		-		0	-	
1	80	29	50	10,000	1	0.9	43	4	4.2
2	80	37	91	10,000	2	0.9	91	2	(2.4)
3	80	40	130	10,000	3	0.9	130	3	0.9
4	80	40	168	10,000	4	0.9	168	4	0.9
5	80	40	207	10,000	4	0.9	207	4	0.9
6		40	167	10,000	4	0.9	167	4	0.9
7		42	125	10,000	3	0.9	125	3	0.9
8		42	84	10,000	2	0.9	84	2	0.9
9		42	42	10,000	1	0.9	42	1	0.9
10		42	0	10,000	-	0.9	-	-	0.9

FPB and DPL Updates for Experience and Assumption Changes

Q 5.3: What are the mechanics of updating the liability for future policy benefits and DPL for experience and assumption changes for limited-payment policies in force at transition?

Calculations when no premium is expected post-transition

At any valuation date, t, after transition:

- $FPB_t = PV_t(Future\ Benefits)$
- $DPL_t = (DPL\ Amort\ \%) \times PV_t(Future\ Amort\ Basis)$
- $DPL\ Amort\ \% = \frac{[\text{Carry Over FPB+Carry Over DPL} - PV_0(Benefits)]}{PV_0(Amort\ Basis)}$

FPB and DPL Updates for Experience and Assumption Changes

At-Transition Liability Calculations: *In-force at Transition; No Premium Expected After Transition*

FPB NPR[(a)]	N/A
DPL Amort %[(c)]	0.042%
Discount Rate:	0%

Carry-Over (C.O.) Balances	
FPB	375
DPL	25

PV @ T=0	0	358	100,000	42

T	Premium	Claims	FPB_t[(b)]	Amort Basis	DPL_t[(d)]	Expected Earnings[(e)]
0			358		42	
1		29	330	10,000	38	4.2
2		33	296	10,000	33	4.2
3		36	260	10,000	29	4.2
4		36	224	10,000	25	4.2
5		36	188	10,000	21	4.2
6		36	152	10,000	17	4.2
7		38	114	10,000	13	4.2
8		38	76	10,000	8	4.2
9		38	38	10,000	4	4.2
10		38	0	10,000	-	4.2

[(a)] *N/A*

[(b)] $FPB_t = PV_t(\text{Future Claims})$

[(c)] $\text{DPL Amort \%} = [\text{C.O. Liabilities} - PV_0(\text{Claims})]/PV_0(\text{Amort Basis})$

$= (375 + 25 - 358)/100{,}000 = 0.042\%$

[(d)] $DPL_t = (\text{DPL Amort \%}) \times PV_t(\text{Future Amort Basis})$

[(e)] $\text{Earnings}_t = \text{Premium}_t - \text{Claims}_t + (FPB_{t-1} - FPB_t) + (DPL_{t-1} - DPL_t)$

FPB and DPL Updates for Experience and Assumption Changes

Time 2 Liability Calculations: *Experience updates and assumption change - mortality increase of 10%*

FPB NPR	N/A
DPL Amort %	0.009%
Discount Rate:	0%

Carry-Over (C.O.) Balances	
FPB	375
DPL	25

PV @ T=0	0	391	100,000	9

T	Premium	Claims	FPB_t	Amort Basis	DPL_t	Expected Earnings
0			391		9	
1		29	363	10,000	8	1
2		37	326	10,000	7	1
3		40	286	10,000	6	1
4		40	247	10,000	5	1
5		40	207	10,000	4	1
6		40	167	10,000	4	1
7		42	125	10,000	3	1
8		42	84	10,000	2	1
9		42	42	10,000	1	1
10		42	0	10,000	-	1

Historical Transition to Projected		
FBP	DPL	Earnings
358	42	
330	38	4.2
326	7	(2.4)
286	6	0.9
247	5	0.9
207	4	0.9
167	4	0.9
125	3	0.9
84	2	0.9
42	1	0.9
-	-	0.9

FPB and DPL Updates for Experience and Assumption Changes

- At each valuation, the FPB is also remeasured using then current discount yields. The difference between this remeasured FPB and the locked-in discount rate FPB is recorded as an adjustment through OCI.
- No such OCI adjustment is recorded for DPL
- Over time, the DPL may shift from zero to non-zero or vice versa as experience unfolds