The Actuarial Society of Hong Kong

# WORKSHOP : CONTRACTUAL SERVICE MARGIN

## 2017 Insurance IFRS Seminar

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Session 15

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# Illustration Example (non-participating)

## Consider a traditional whole life portfolio that covers a 12 month issue period

- **Assuming that pricing cannot be used to form groups**

- Contract level calculation then becomes necessary in order to form groups;
- Three groups are formed based on contract level CSM information:
  - profit-making, loss-making and potential onerous

| Beginning of Year | PV FCFs | RA | CSM |
|---|---|---|---|
| Profit-making group | 100 | 10 | 20 |
| Potential onerous group | 100 | 15 | 5 |
| Loss-making group | 100 | 20 | -10 |
| Total Portfolio | **300** | **45** | **?** |
| Total Portfolio reflecting diversification effect | 300 | ? | ? |

- Questions:
  1. What is the reported CSM for this portfolio?
  2. If three groups are independent of each another (for simplicity. In reality, they'd be most likely positively correlated as they are in the same portfolio), and the risk adjustment has been calculated at the group level, how might you quantify the risk adjustment reported at the portfolio level?
  3. In amortizing the CSM, what is a reasonable proxy for coverage units to reflect the service provided?
  4. Would it be possible the reasonable proxy, which determines the pattern of service, differs by group?

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# Illustration Example (non-participating)

## Unlocking the CSM at the Group Level

- **Consider the profit-making group from previous slide. Assume its BOY inforce face amount is 500, and EOY face amount is 450.**

- Locked-in discount rate is 4% for the CSM;
- Future cash flow discount rate changed from 4% to 5%, and future lapse assumptions were updated during the year;
- Results under different runs are shown to the right for PV of FCFs and RA;
- Experience adjustments are ignored in this example.

- Questions:
  - What is the amount of interest accretion during the year?
  - What are the amounts of changes in PV of FCFs and RA that are recognised in the CSM?
  - What is the amortized portion of the CSM for this period?
  - What is the EOY CSM?

| | PV of FCFs | RA |
|---|---|---|
| **BOY@4%** | 100.0 | 10.0 |
| **EOY@4%/old lapses** | 90.0 | 9.0 |
| **EOY@4%/new lapses** | 98.0 | 9.8 |
| **EOY@5%/new lapses** | 92.0 | 9.2 |

| | |
|---|---|
| **BOY CSM** | **20.0** |
| **+ Interest Accretion** | ? |
| **- Chg of PV of FCFs** | ? |
| **- Chg of RA** | ? |
| **- Amortization** | ? |
| **EOY CSM** | **?** |

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# Illustration Example (VFA)

## Unlocking the CSM at the Group Level

- **Consider the profit-making group from previous slide. Assume its BOY inforce face amount is 500, and EOY face amount is 450.**

- Future cash flow discount rate changed from 4% to 5%, and future lapse assumptions were updated during the year;
- Results under different runs are shown to the right for PV of FCFs and RA;
- Experience adjustments are ignored in this example.

- Question:
  - Under the VFA approach, how would the calculations on the previous slide change?

| | PV of FCFs | RA |
|---|---|---|
| BOY@4% | 100.0 | 10.0 |
| EOY@4%/old lapses | 90.0 | 9.0 |
| EOY@4%/new lapses | 98.0 | 9.8 |
| EOY@5%/new lapses | 92.0 | 9.2 |

| | |
|---|---|
| BOY CSM | 20.0 |
| + Interest Accretion | ? |
| - Chg of PV of FCFs | ? |
| - Chg of RA | ? |
| - Amortization | ? |
| EOY CSM | ? |

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