LFMU Sample Flashcards

You have downloaded a sample of our LFMU flashcards. The flashcards are designed to help you memorize key material for the SOA's LFMU exam.

The flashcards are in a "Q&A" format that is well-suited for reviewing the material at a high level after you complete section of the online seminar. The cards are sequenced in exactly the same order as the rest of the online seminar. Practicing your ability to recall the material in the form of an answer to a question is a great way to get ready for the actual exam.

Flashcard Formats Available

The same cards are in each format below. Only the format of the cards differs, as explained below.

1. **"Singles"**. This version contains alternating front/back sides of each card in sequence. This format is well suited for PDF viewers on your computer, tablet, or phone. Simply flip through the pages.

2. **"FrontBack"**. This version has 3 cards per page. If you print this PDF double-sided on U.S. Letter (8.5" x 11") paper, the front and back of each card will be aligned. This format also works well on Avery 5388 3x5" index cards, which can be purchased on Amazon. Printing instructions are included with the full flashcard set available in the online seminar.

3. **Review in TIA Study.** The Review screen in TIA Study contains exactly the same flashcard content as the PDF versions and also offers additional features, including spaced repetition and a card Inbox that shows cards based on your progress in the course. Your progress on the Review screen stays in sync across all versions of TIA Study (desktop, mobile, etc.).

Samples of the "front back" format are included in this PDF. You can see samples of the mobile flashcards by simply downloading the app for free.

If you have any questions, email me anytime.

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Describe the net level premium reserve method.

What is the full preliminary term reserve method?

What is the commissioner's reserve valuation method (CRVM)?

Net premiums are a constant % of gross premiums

$$
\begin{aligned}
{}_tV_x^{NLP} &= \text{PVFB}_t - NP_0 \cdot \ddot{a}_{x+t} \\
NP_0 = PB_0 &= \left(\frac{\text{PVFB}_0}{\ddot{a}_x}\right) = \text{NP for first policy year} \\
r_t^{GP} &= \text{gross premium ratio} = \frac{GP_t}{GP_0} \\
\ddot{a}_x &= 1 + v \cdot {}_1p_x \cdot r_1^{GP} + v^2 \cdot {}_2p_x \cdot r_2^{GP} + \cdots \\
\ddot{a}_{x+t} &= r_t^{GP} + v \cdot {}_1p_{x+t} \cdot r_{t+1}^{GP} + v^2 \cdot {}_2p_{x+t} \cdot r_{t+2}^{GP} + \cdots \\
NP_t = PB_t &= PB_0 \cdot r_t^{GP}
\end{aligned}
$$

FPT = Modified NLP Method with a formulaic expense allowance

$$
\begin{aligned}
{}_tV_x^{FPT} &= {}_tV_x^{NLP} - {}_tVE_x = \text{PVFB}_t - (\text{PVPB}_t + \text{PVPE}_t) \\
{}_tVE_x = \text{PVPE}_t &= PE_0 \times \ddot{a}_{x+t} \\
PE_0 &= \frac{EA_x}{\ddot{a}_x} \\
EA_x &= NP_1 - c_x = \left(\frac{\text{PVFB}_1}{\ddot{a}_{x+1}}\right) - c_x \\
c_x &= v \cdot q_x \cdot \text{DB} = \text{first-year cost of insurance} \\
NP_t &= \begin{cases} c_x & \text{for } t = 0 \quad (\alpha) \\ PB_t + PE_t = \dfrac{\text{PVFB}_1}{\ddot{a}_{x+1}} \cdot r_t^{GP} & \text{for } t \geqslant 1 \quad (\beta) \end{cases}
\end{aligned}
$$

- A modified reserve where EA is the **smaller** of
  1. EA under FPT for the contract
  2. EA under FPT assuming 20-pay contract
- Smallest reserves allowed by SVL
- ${}_tV_x^{\text{CRVM}} = {}_tV_x^{\text{FPT}}$ unless $m < 20$ years

What are the formulas for mean and mid-terminal reserves?

What are the types of continuous reserves?

Describe the purpose and calculation of the immediate payment of claims reserve.

Source: SVILAC Ch. 11: Valuation Methodologies

Mean Reserve − DPA = Mid-Terminal Reserve + UPL

$$\text{InterpMeanV} = (1-h)\,({}_{t-1}V_x + NP_t) + h\,({}_tV_x)$$

$$\text{MeanV} = \frac{({}_{t-1}V_x + NP_t) + ({}_tV_x)}{2} \text{ if assume } h = 0.5 \text{ (common)}$$

$$\text{DPA} = \sum \text{Modal NPs due between val date and next anniversary}$$

$$\text{InterpMidV} = (1-h)\,({}_{t-1}V_x) + h\,({}_tV_x)$$

$$\text{MidV} = \frac{{}_{t-1}V_x + {}_tV_x}{2} \text{ if assume } h = 0.5 \text{ (common)}$$

$$\text{UPL} = \frac{\text{\# months until next premium}}{\text{\# months between premium payment}} \times \text{Modal NP}$$

DPA and UPL are held separately in the statutory financial statements

Source: SVILAC Ch. 11: Valuation Methodologies

1. **Semicontinuous**
   - DB paid at moment of death
   - Premiums paid BOY
2. **Fully Continuous**
   - DB paid at moment of death
   - NP paid continuously throughout year
   - UPL for NPs paid beyond val date
3. **Discounted Continuous**
   - Semicontinous
   - Assumes refund of unearned premium at death
   - Requires a DPA

Source: SVILAC Ch. 11: Valuation Methodologies

Required for any reserve method that assumes **curtate death benefits**

- In reality, DBs are paid closer to time of death

$$\text{IPCR}_t = \begin{cases} \frac{i}{3}\text{PVFB}_{x+t} & \text{if DB paid } \underline{\text{without}} \text{ interest} \\ \frac{i}{2}\text{PVFB}_{x+t} & \text{if DB paid } \underline{\text{with}} \text{ interest} \end{cases}$$

Based on “death portion of the reserve”