

THE HONG KONG POLYTECHNIC UNIVERSITY
HONG KONG COMMUNITY COLLEGE

Subject Title : Financial Markets and Institutions **Subject Code** : CCN2114

Session : Semester Two, 2015/16

Numerical Answers

Question B1

- (d) Year 1 profits = $(4.75\% - 4.25\%) \times \$150 \text{ million} = \underline{+\$750,000}$;
NIM_{yr1} = $\$750,000 / \$150 \text{ million} = 0.50\%$
Year 2 profits = $(3.75\% - 4.25\%) \times \$150 \text{ million} = \underline{-\$750,000}$
Change in profits = $-\$1,500,000$
NIM_{yr2} = $-\$1,500,000 / \$150 \text{ million} = -1.00\%$, so NIM decreases by 100 basis points.

Question B2

- (e)(i) Combined ratio after dividends = $\frac{26,760 + 9,125 + 600}{35,600} = 102.49\%$
- (e)(ii) Operating Ratio = combined ratio after dividends - $\frac{\text{investment income}}{\text{premiums earned}} = 102.49\% - \frac{1,525}{35,600} = 98.20\%$
- (e)(iii) $\frac{\text{Max \$ Loss} + 9,125 + 600 - 1,525}{35,600} = 100\%$; Max \$ Loss = \$27,400
Max Loss ratio = $27,400 / 35,600 = 76.97\%$

Question B3

- (b)(ii) $(70M - 30M) / 800M = 40 / 800 = 5\%$
- (b)(iii) $600M - 300M = 300 \text{ million (negative)}$
- (c) Duration = $(0.50 \times 0.5) + (0.20 \times 12) + (0.30 \times 1) = 2.95 \text{ years}$

Question B4

- (a)(i) Risk-adjusted assets = $\$20 \times 0.0 + \$40 \times 0.0 + \$600 \times 0.5 + \$430 \times 1.0 = \$730$.
The CET1 risk-based ratio is $(\$45 + \$40) / \$730 = 11.6 \text{ percent}$.
- (a)(ii) Risk-adjusted assets = $\$20 \times 0.0 + \$40 \times 0.0 + \$600 \times 0.5 + \$430 \times 1.0 = \$730$
Tier I capital ratio = $(\$45 + \$40 + \$10) / \$730 = 13.01 \%$.
- (a)(iii) The total risk-based capital ratio = $(\$45 + \$40 + \$10 + \$25) / \$730 = 16.4\%$.
- (a)(iv) The leverage ratio is $(\$45 + \$40 + \$10 + \$25) / \$1,090 = 11\%$.

(b)(i)	Sources of liquidity	
	T-Bills	12
	Excess reserves at Fed	2
	Vault cash	1
	Credit line	<u>14</u>
	Total sources	29
	Uses of liquidity	
	Fed Funds	6
	ST Notes	<u>9</u>
	Total Uses	<u>15</u>
	Net Liquidity Position	+14