

21. (3.5 points)

The following information is available for a federally-regulated property and casualty insurance company as at December 31, 2018. All amounts are in thousands of dollars (\$000s).

Statement of Financial Position

	Current Year	Prior Year
Cash	10,000	8,000
Bonds and debentures	45,000	50,000
Common shares	3,000	2,500
Real estate	15,000	20,000
Agents and brokers receivables	1,000	1,250
Unearned premiums recoverable	11,500	12,500
Unpaid claim and adjustment expenses recoverable	?	?
Total assets	120,000	112,500
Gross unpaid claims and adjustment expenses	45,000	42,500
Equity	40,000	37,500

Statement of Income

	Current Year	Prior Year
Net premiums written	45,000	47,500
Decrease (increase) in net unearned premiums	1,500	1,250
Net claims and adjustment expenses	40,000	37,500
Net acquisition expenses	7,500	7,500
General expenses	3,500	4,000
Investment income	7,500	5,000
Realized gains (losses)	(1,000)	500
Investment expenses	800	600
Total income taxes	1,000	1,250

The net leverage ratio at the end of the current year is 250%.

All of the company's reinsurance is placed with an unregistered reinsurer without collateral.

<< QUESTION 21 CONTINUED ON NEXT PAGE >>

CONTINUED ON NEXT PAGE

a. (1.75 points)

Calculate each of the following ratios as at December 31, 2018:

- i. Investment yield
- ii. Return on equity
- iii. Return on assets
- iv. Net underwriting leverage ratio

b. (1 point)

Based on three ratios calculated in part a. above or any information given, comment on the company's financial health.

c. (0.75 point)

Calculate the unpaid claims and adjustment expenses recoverable at the end of 2018.

CONTINUED ON NEXT PAGE

QUESTION 21**TOTAL POINT VALUE: 3.5****LEARNING OBJECTIVE(S): C2****SAMPLE ANSWERS****Part a: 1.75 points**Sample 1

i.

$$\text{Yield} = \frac{2 * \text{Net ii}}{V_b + V_e - \text{Net ii}}$$

$$V_b = 8,000 + 50,000 + 2,500 + 20,000 = 80,500$$

$$V_e = 10,000 + 45,000 + 3,000 + 15,000 = 73,000$$

$$\text{Net}_{ii} = 7,500 - 1000 - 800 = 5,700$$

$$\text{Yield} = \frac{2 * 5,700}{80,500 + 73,000 - 5,700} = 7.71\%$$

ii.

$$\text{ROE} = \frac{\text{NI after tax}}{\text{Equity}}$$

$$\text{NI} = \text{NEP} - \text{Net clms} + \text{Net ii} - \text{expenses} - \text{taxes}$$

$$\text{NEP} = 45,000 - (-1500) = 46,500$$

$$NI = 46,500 - 40,000 - 7500 - 3500 + 5700 - 1000 = 200$$

$$ROE = \frac{200}{40,000} = 0.5\%$$

iii.

$$ROA = \frac{NI \text{ after tax}}{2 \text{ yrs avg assets}} = \frac{200}{0.5 * (120,000 + 112,500)} = 0.172\%$$

iv.

$$\text{Net UW lev ratio} = \frac{NWP}{Equity} = \frac{45,000}{40,000} = 112.5\%$$

Sample 2 (for ii. only)

ii.

$$ROE = \frac{NI}{\text{Avg Equity}}$$

$$NI = 45,000 + 1,500 - 40,000 - 7,500 - 3,500 + 7,500 - 1000 - 800 - 1000 = 200$$

$$ROE = \frac{200}{(37,500 + 40,000)/2} = 0.52\%$$

Part b: 1 point

Sample 1

- Yield = 7.71 = Good
- ROE = 0.5% < 5.4% Bad
- ROA = 0.172% < 2.6% Bad

Overall, poor financial condition since despite the high investment yield, ROE and ROA are really low.

Sample 2

- Net underwriting leverage ratio = 112.5%, which is below 300%, so favorable.
- ROE is equal to 0.5%, which is below 5.4%, so unfavorable.
- ROA is equal to 0.172%, which is below 2.6%, so unfavorable.

Overall, the financial health of the company is not so good because ROE and ROA. Underwriting income was too low.

Part c: 0.75 point

Sample 1

$$\text{Net lev ratio} = \frac{\text{NWP} + \text{Net liab}}{\text{Eq}} = 250\%$$

$$\frac{\text{Net liab}}{\text{Equity}} = \text{Overall net lev ratio} - \text{Net UW lev ratio} = 2.5 - 1.125 = 1.375$$

$$\text{Net liab} = \text{EQ} * 1.325 = 40,000 * 1.375 = 55,000$$

$$\text{Tot liab} = \text{Assets} - \text{EQ} = 120,000 - 40,000 = 80,000$$

$$\text{Tot liab} = \text{Gross UCAE} + \text{Gross UEP}$$

$$80,000 = 45,000 + \text{Gross UEP}$$

$$\text{Gross UEP} = 35,000$$

$$\text{Net liab} = \text{Net UCAE} + \text{Net UEP}$$

$$55,000 = (45,000 - \text{UCAE REC}) + (35,000 - 11,500)$$

$$\text{UCAE REC} = 13,500$$

Sample 2

$$\text{Total liabilities} = 120,000 - 40,000 = 80,000$$

$$\text{Net leverage ratio} = \frac{\text{Net written premiums} + \text{Net liabilities}}{\text{Equity}} = \frac{45,000 + x}{40,000} = 250\%$$

$$x = 55,000$$

$$\begin{aligned} \text{Net liabilities} &= \text{Total liabilities} - \text{unearned premiums recoverables} \\ &\quad - \text{unpaid claim and adjustment expenses recoverables} \end{aligned}$$

$$55,000 = 80,000 - 11,500 - x$$

$$x = 13,500$$

EXAMINER'S REPORT

Candidates were expected to know how to calculate and use financial ratios to assess the financial health of an insurance company.

Part a

Candidates were expected to:

- Accurately calculate various financial ratios
- Use the appropriate components from the statement of financial position and statement of income in the calculation of the financial ratios

A common error included incorrectly defining the ratios.

Part b

Candidates were expected to know how to interpret the ratios calculated in part a. above.

Common errors included:

- Using an incorrect threshold to assess the financial health
- Answering Yes or No when the question asks for an assessment with supporting comments

Part c

Candidates were expected to know how to use information provided in the question and calculated in part a. to determine the unpaid claims and adjustment expenses recoverable.

A common error included not incorporating Net Leverage Ratio in determining the answer.