

4. (2.25 points)

Given the following information for an insurance company:

	(\$000)
Written Premium	15,000
Earned Premium	12,000
Ultimate Losses and LAE	10,000
Commissions and Brokerage	2,250
Other Acquisition Costs	750
Taxes, Licenses, and Fees	300
General Expenses	360

- All expenses are variable.
- Underwriting profit provision = -5%.

a. (1 point)

Calculate the following expense ratios to premium and briefly justify the selection of the premium basis used in each calculation:

- Commissions and brokerage
- General expenses

b. (0.5 point)

Calculate the permissible loss and LAE ratio.

c. (0.25 point)

Briefly explain how the company may return a profit with an underwriting profit provision less than 0%.

d. (0.5 point)

Demonstrate whether or not the company met underwriting profit expectations.

EXAM 5 SPRING 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 4	
TOTAL POINT VALUE: 2.25	LEARNING OBJECTIVE(S): A4
SAMPLE ANSWERS	
Part a: 1 point	
<u>Sample Response for Commission and Brokerage Ratio:</u>	
$\frac{\text{Commission \& Brokerage Expense}}{\text{Written Premium}} = \frac{2,250}{15,000} = 15\%$	
<u>Sample Response for General Expense Ratio:</u>	
$\frac{\text{General Expense}}{\text{Earned Premium}} = \frac{360}{12,000} = 3\%$	
<u>Sample Responses for Selected Commission & Brokerage Ratio Premium Base:</u>	
<ul style="list-style-type: none"> • Relate commissions and brokerage to written premium because they are incurred at policy inception • Commissions are proportional to written premium • Commissions are based on how much agents write • Commission and Brokerage incur at the beginning of the year, so we use written premium 	
<u>Sample Responses for Selected General Expense Ratio Premium Base:</u>	
<ul style="list-style-type: none"> • Relate general expenses to earned premium because incurred throughout the policy • General Expenses are the ongoing costs of the policies and insurer operation, so typically divided by earned premium • General expenses are related to maintaining policies. They are incurred in line with the portion of policies earned. Use earned premium. • General Expense is incurred throughout the year, so we use earned premium 	
Part b: 0.5 point	
<p>Other Acq: $\frac{\text{Other Acquisition Expense}}{\text{Written Premium}} = \frac{750}{15,000} = 5\%$</p> <p>TLF: $\frac{\text{Taxes, Licenses, and Fees}}{\text{Written Premium}} = \frac{300}{15,000} = 3\%$</p> <p>PLR = $1 - V - Q_T$</p> <p>$V = 0.15 + 0.03 + 0.05 + 0.02 = 0.25$</p> <p>$Q_T = 0.05$</p> <p>PLR = $1 - 0.25 - 0.05 = 0.8$</p>	
Part c: 0.25 point	
<p>Any one of the following:</p> <ul style="list-style-type: none"> • The profit can be from investment. If the company has a good investment performance, they can still have a positive total profit 	

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- Investment Income
- Take a more aggressive investment strategy to offset a u/w profit provision less than 0%
- In a long tailed LOB where there is more time to earn investment income, the investment income + negative u/w profit can be net positive
- Under the asset share pricing model, the company may gain a positive return in a long run with a negative profit provision in the one-year horizon.
- The company may be seeking growth in the short-run and profitability in the long run as renewal expenses are lower than new business expenses.
- Have low profit provision to gain market share now and increase profits later.
- The company may have a favorable loss year where actual LR is well under permissible LR

Part d: 0.5 point

Sample 1

$$\text{L\&LAE Ratio} = \frac{10,000}{12,000} = 83\%$$

83% > PLR of 80%

The company did not meet u/w profit expectations

Sample 2

$$\frac{10,000}{12,000} = 83\%$$

$\frac{83\%}{80\%} - 1 = 4.17\%$ The rate indication suggests that the rate should be increased by 4.17%. Therefore, the company did not meet the u/w profit expectations.

Sample 3

$$\frac{10,000}{12,000} = 83\%$$

$0.83 = 1 - 0.25 - \text{u/w profit}$

u/w profit = -.083

Because $-8.3\% < -5\%$ it did not meet expectations

Sample 4

$$\frac{10,000}{12,000} = 83\%$$

They did not meet expectations by 3.3%

Sample 5

$$\text{Indicated Premium} = \frac{10,000}{0.8} = 12,500$$

$12,500 > 12,000$ so the company did not meet expectations

Sample 6

$$\text{L\&LAE Ratio} = \frac{10,000}{12,000} = 83\%$$

Combined Ratio = $0.83 + 0.25 = 1.083$

$1.083 > 1.05$ Did not meet expectations

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EXAMINER'S REPORT
Candidates were expected to apply their knowledge of expense and profit provisions to determine whether or not the company had achieved an underwriting profit.
Part a
<p>Candidates were expected to calculate underwriting expense ratios, select the appropriate premium base for each expense ratio, and give an explanation as to why the premium base was an appropriate selection. The explanation for the selected premium base needed to contain a clear reason for why the selection was appropriate for the given expense ratio.</p> <p>Common errors included:</p> <ul style="list-style-type: none">• Selecting the wrong premium base for one or both of the expense ratios.• Vague or incorrect justifications for the selected premium base. Answers such as "Commission and Brokerage is more closely associated with written premium and General Expense is more closely associated with earned premium" were not given credit as these answers do not explain why the premium base is appropriate.
Part b
<p>Candidates were expected to correctly identify the additional expense components of the total underwriting expense ratio, calculate them, and then calculate the permissible loss and LAE ratio (PLR).</p> <p>Common errors included:</p> <ul style="list-style-type: none">• Selecting the wrong premium bases for the Other Acquisition and Taxes, Licenses, and Fees expense ratios.• Failing to include all of the components of expense and profit provisions in the PLR calculation.• Not including the profit and contingencies provision in the PLR calculation, or including a 5% profit provision instead of a -5% profit provision.• Calculating the actual loss and LAE ratio rather than the PLR. Assuming some expenses were fixed when the question states that all expenses are variable.
Part c
<p>Candidates were expected to explain how the total profit could be positive given that the business was priced using a negative underwriting profit provision.</p> <p>Common errors included:</p> <ul style="list-style-type: none">• Explaining ways the company could improve its underwriting profit.• Explaining reasons why a company might have a negative underwriting profit.
Part d
<p>Candidates were expected to perform a calculation and use its results to state and justify a conclusion as to whether or not the underwriting profit expectations were met.</p> <p>Common errors included:</p> <ul style="list-style-type: none">• Completing a calculation but not clearly stating a conclusion.• Using dollar amounts in the fundamental insurance equation instead of ratios.• Using written premium as the base for the loss and LAE ratio.

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- Stating that the company met profit expectations when the calculations indicated otherwise.
- Stating that the company did not meet profit expectations because the calculated profit was less than 0% when the expectation was a -5% profit.