

EXAM 6 – UNITED STATES, SPRING 2016

17. (3.5 points)

Given the following data from an insurer's 2014 statutory Annual Statement (all figures are in thousands of dollars):

	2014	2013
Losses incurred	25,000	22,000
Loss adjustment expenses incurred	5,000	4,000
Dividends to policyholders	100	100
Premiums earned	35,000	34,000
Other underwriting expenses incurred	4,000	3,500
Total other income	50	45
Net Premiums Written	36,000	34,500
Net investment income earned	3,000	2,500
Total cash and invested assets	100,000	95,000
Investment income due and accrued	500	450

a. (2 points)

Determine whether IRIS ratio 5 (Two-year overall operating ratio) falls within the range of usual values.

b. (0.25 point)

Briefly describe the purpose of IRIS ratio 5.

c. (1.25 points)

Determine whether IRIS ratio 6 (Investment yield) falls within the range of usual values.

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SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 17	
TOTAL POINT VALUE: 3.50	LEARNING OBJECTIVE: C2
SAMPLE ANSWERS	
Part a: 2 points	
<p>IRIS Ratio 5 (Two-Year Overall Operating Ratio) = Two-Year Loss Ratio (A) + Two-Year Expense Ratio (B) – Two-Year Investment Income Ratio (C) = 0.81 + 0.11 – 0.08 = 0.84</p> <p>(A) Two-Year Loss Ratio = (Losses & LAE Incurred + Policyholder Dividends) / Premium Earned = (25,000 + 22,000 + 5,000 + 4,000 + 100 + 100) / (35,000 + 34,000) = 0.81</p> <p>(B) Two-Year Expense Ratio = (Other Underwriting Expenses Incurred – Total Other Income) / Net Premium Written = (4,000 + 3,500 – 50 – 45) / (36,000 + 34,500) = 0.11</p> <p>(C) Two-Year Investment Income Ratio = Net Investment Income Earned / Premium Earned = (3,000 + 2,500) / (35,000 + 34,000) = 0.08</p> <p>Falls within usual range less than 100% or 1.00.</p> <p>OR</p> <p>= (25,000 + 22,000 + 5,000 + 4,000 + 100 + 100 – 3,000 – 2,500) / (35,000 + 34,000) + (4,000 + 3,500 – 50 – 45) / (36,000 + 34,500) = 0.73 + 0.11 = 0.84 which is less than 1, so falls within usual range</p>	
Part b: 0.25 point	
<ul style="list-style-type: none"> • The purpose of IRIS ratio 5 is to identify companies that are operating unprofitably. • To identify if a company is making an underwriting profit or a loss. • To identify if the insurer is operating at a loss or not. 	
Part c: 1.25 points	
<p>IRIS Ratio 6 (Investment Yield) = Net Investment Income Earned / Average Cash and Invested Assets, Current and Prior Year</p> <p>= 2 * Net Investment Income Earned / (Total Cash and Invested Assets (Current & Prior Year) + Investment Income Due & Accrued (Current & Prior Year) – Borrowed Money (Current & Prior Year) – Net Investment Income Earned)</p> <p>= 2 * 3,000 / (100,000 + 95,000 + 500 + 450 – 0 – 0 – 3,000) = 0.031</p> <p>OR</p> <p>= 3,000 / (0.5 *(100,000 + 95,000 + 500 + 450 – 0 – 0 – 3,000)) = 0.031</p> <p>Falls within usual range between 0.03 and 0.065</p>	

SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT
<ul style="list-style-type: none">• For this question candidates were expected to know the formulas for IRIS ratio 5 and 6, show the components of the ratios as part of the calculations, and state the full range of usual values for these ratios. For part b, candidates were expected to identify for what IRIS ratio 5 is used.• Candidates performed well on parts a. and b, and had difficulty with part c.
Part a
<ul style="list-style-type: none">• The candidate was expected to know the formula for IRIS ratio 5, where the candidate should add the two-year loss and expense ratio and subtract the two-year investment income ratio. Also, the candidate had to state whether the resulting ratio falls within the usual values and what those are.• Common errors made by candidates:<ul style="list-style-type: none">○ Policyholder dividends were either omitted from the calculations, divided by written premium instead of earned premium, or subtracted instead of added.○ Total Other Income was either omitted from the calculations, divided by earned premium instead of written premium, or added instead of subtracted.○ Investment income due and accrued was added as part of the calculation of investment income ratio.○ Investment income ratio was added to loss and expense ratio instead of subtracted.○ Averaged the current and prior values for each component instead of summing the components.○ The usual values for the ratio was not mentioned.
Part b
<ul style="list-style-type: none">• The candidate was expected to mention that IRIS ratio 5 is used to identify whether the company is operating profitably.• The question asks the candidate for the <u>purpose</u> of the ratio.• Common errors included stating that the ratio is used to identify:<ul style="list-style-type: none">○ Operating efficiency○ Operating performance○ 2-year net operating ratio○ Rate / Premium adequacy○ Solvency○ Income / Cash flow
Part c
<ul style="list-style-type: none">• The candidate was expected to know the formula for IRIS ratio 6, where the candidate is expected to take the current year net investment income earned and divide by the average cash and invested assets over the current and prior year. Also, the candidate had to state whether the resulting ratio falls within the usual values and what those are.• Common errors made by candidates:<ul style="list-style-type: none">○ Used the prior year instead of current year net investment income earned in the numerator.○ Used only the current year components in the denominator instead of calculating the 2-year average.

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Did not average the denominator by forgetting to multiply the entire formula by 2 or divide the entire formula by $\frac{1}{2}$.
- If divided the entire formula by $\frac{1}{2}$, mistakenly did not apply it to the subtracted investment income in the denominator.
- Omitted the investment income due and accrued from the calculation or subtracted it instead of adding it.
- Included the investment income due and accrued in the numerator of the formula.
- Omitted the current year net investment income earned from the denominator or adding it instead of subtracting it.
- Used the current and prior year net investment income earned in the numerator and denominator instead of just the current year.
- Both the lower and upper bounds of the usual values for the ratio were not mentioned.