16. (3.25 points)

Given the following 2016 information from an insurance company (all dollar figures in millions):

Item	Amount
Reinsurance Ceded Commissions	$7
Reinsurance Ceded Contingent Commissions	$9
Reinsurance Premiums Ceded - Affiliates	$40
Reinsurance Premiums Ceded - Non-Affiliates	$48
Reinsurance Premiums Assumed – Affiliate	$60
Reinsurance Premiums Assumed - Non-Affiliates	$35
Unearned Premiums	$30
Direct Written Premium	$152
Policyholders' Surplus	$28

Ratio	Value
Two-Year Loss Ratio	50%
Two-Year Expense Ratio	15%
Two-Year Investment Income Ratio	8%
Policyholder Dividend Ratio	2%

a. (1.25 points)

Determine whether IRIS ratio 4, Surplus Aid to Policyholders' Surplus, falls within the range of usual values.

b. (1.5 points)

Calculate IRIS ratios 1 and 2 and determine whether they are in the range of usual values.

c. (0.5 point)

Describe why a regulator may not be concerned about the financial health of this company.

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Part b

Candidates were expected to demonstrate knowledge of the usual range for IRIS Ratio 5 and the reaction of a regulator based on whether the ratio was in the usual or unusual range.

Common errors include:

- Failing to mention the cut-off of the usual range
- Identifying an incorrect usual range
- Describing a regulator action inconsistent with the finding such as:
    - Limit the insurer's future writings; or
    - Recommend laying off employees to reduce expenses
- Describing a regulator action inconsistent with the finding from a directional standpoint (saying the ratio was in the range, then recommending regulator action, or vice versa).

QUESTION: SPRING 2018 EXAM 6U, QUESTION 16	
TOTAL POINT VALUE: 3.25	**LEARNING OBJECTIVE: C2**

SAMPLE ANSWERS

Part a: 1.25 points

The data provided for this question did not clearly state whether the UEPR figure was for non-affiliates only or included affiliate UEPR. Full credit was available for solutions using the UEPR as given or after making an adjustment for affiliate UEPR.

Sample 1 – assumes all of the UEPR is for non-affiliates

Surplus aid = (7+9)/(40+48) x 30 = 5.45

Assume all of reinsurance premiums ceded to affiliates are earned; all of UEPR is for non-affiliates

IRIS Ratio #4 = 5.45 / 28 = 19.48% > 15% unusual

Sample 2 – assumes the UEPR is for non-affiliates and affiliates combined v1

Ceding commission percentage = (7+9)/(40+48) = .182

WP percent ceded to unaffiliated: 48/152 = .316

Surplus aid = .182x(.316 x 30) = 1.73

1.73 / 28 = 6.2% < 15% so this is in the usual range

Sample 3 – assumes the UEPR is for non-affiliates and affiliates combined v2

Ceding commission ratio = (7+9)/(40+48) = .182

Gross Premium Written = 152 + 60 + 35 = 247

Net Premium Written = 247 – 88 = 159

Assume 30 Unearned Premium is Net

% Unearned = 30 / 159 = 0.1887

Ceded Unearned Premium (non-affiliates) = 0.1887(48) = 9.06

IRIS #4 = 9.06(.182)/28 = 5.9% < 15%

This is within the usual range. No adjustment needed for other ratios.

Sample 4 – assumes the UEPR is for non-affiliates and affiliates combined v3
Ceding com % = (7+9)/(40+48) = .182

152 + 60 + 35 = 247 = Dir + Assumed WP
48/247 = 19.4% => % WP ceded to Non-Affiliates
30 x 19.4% = 5.83 => Amount UEP from Non-Affiliates

Surplus Aid = 18.2% x 5.83 = 1.06

Ratio 4 = 1.06 / 28 = 3.8% < 15% within normal range

Sample 5 – assumes the UEPR is for non-affiliates and affiliates combined v4
Ceding % = (7+9)/(40+48) = .182
Assume unearned premium is proportionate between affiliated / non-affiliated ceded premiums.

Non-Affiliated UEPR = 30 x 48/(40+48) = 16.36

Surplus Aid = 16.36 x 18.18% = 2.98

IRIS Ratio 4 = 2.98 / 28 = 10.6% < 15% within the usual range.

Part b: 1.5 points

Sample 1 – if IRIS 4 found to be usual
Revised PHS = 28-5.45 = 22.55
IRIS 1 = GWP/PHS = (152+60+35)/22.55 = 1095%>900% unusual
IRIS 2 = NWP/PHS = (152+60+35-40-48)/22.55 = 705%>300% unusual

Sample 2 – if IRIS 4 found to be unusual
IRIS 1 = GWP/PHS = (152+60+35)/28 = 882%<900%
IRIS 2 = NWP/PHS = (152+60+35-40-48)/28 = 568%>300%

Adjusted IRIS 1 = GWP/PHS = 882% / (1-1948%) = 1095%>900% unusual
Adjusted IRIS 2 = NWP/PHS = 568%/(1-19.48%) = 705%>300% unusual

Part c: 0.5 point

- Two year overall operating ratio = 50% + 15% -8% +2% = 59% Two year overall operating ratio is much lower than 100% which reflects the insurer has strong profitability so the regulator may not concern its financial health
- Two year operating ratio = 50% + 15% -8% = 57%, remote from 100% so even IRIS Ratio 2

is unusual, the insurer is making a profit which means it can take more risks.

- A large amount of premium is ceded to and assumed from affiliates. This implies it is part of a larger holding company that could be financially stable as a whole.
- The two year operating expense ratio is well below the unusual range of values, even before considering investment income. 65% < 100%. Therefore, although the premiums are high relative to the surplus, the company's operations are profitable.
- IRIS Ratio 5 is well under 100% so it appears profitable.

EXAMINER'S REPORT

The candidate was expected to demonstrate knowledge of calculating and interpreting IRIS Ratios.

Part a

Candidates were expected to calculate the ceded commission percentage and multiply that by UEPR to obtain surplus aid. They were expected to calculate the IRIS Ratio and compare it to the usual range of results.

Common errors included:

- Multiplying the ceded commission percentage by non-affiliates ceded premium instead of UEPR
- Calculating an adjustment to UEPR using both affiliates and non-affiliates as a ratio of some derivation of premium which does not distinguish the UEPR for non-affiliates only
- Calculating the ceded commission percentage incorrectly

Part b

Candidates were expected to calculate IRIS Ratio 1 and 2 with knowledge of adjusting PHS for the surplus aid calculated in part a. They were expected to further compare those ratios to the usual range of results.

Common errors included incorrect calculations of GWP and NWP and overlooking the PHS adjustment.

Part c

Candidates were expected to address operating results that were profitable, irrespective of the IRIS Ratio performances in parts a. and b.

Common errors included:

- Only stating that IRIS Ratios in parts a. and b. were unusual as their rationale with no mention of profitability
- Miscalculating the operating ratio.