19. (4.25 points)

An insurer writing workers compensation, property, and general liability policies has obtained reinsurance for excess and catastrophic losses for the past six years. The following information is either provided in or derived from the 2012 Annual Statement (all figures in millions of dollars).

	2010	2011	2012
Premiums Written:			
Direct basis	483.5	594.6	611.7
Reinsurance assumed	19.2	33.3	39.0
Reinsurance ceded	21.7	66.3	131.4
Ceding Commission:			
Reinsurance ceded, excluding contingent	6.2	15.1	31.9
Contingent – reinsurance ceded	1.4	1.6	3.4
Unearned Premium:			
Total authorized other-U.S. insurers unaffiliated	3.4	16.3	23.1
Total unauthorized other-U.S. insurers unaffiliated	0.0	0.6	1.6
Authorized mandatory pools	1.3	3.1	3.4
Unauthorized mandatory pools	0.3	0.6	1.3
Authorized voluntary pools	3.1	3.8	5.3
Unauthorized voluntary pools	0.0	0.6	1.6
Total authorized non-U.S. insurers	4.4	5.6	12.2
Total unauthorized non-U.S. insurers	2.5	4.1	5.9
Surplus as regards policyholders	67.7	67.5	77.1
IRIS ratio 11	2.4%	-2.6%	14.2%
IRIS ratio 12	0.7%	-4.3%	17.4%
IRIS ratio 13	3.2%	11.6%	27.4%

a. (1.5 points)

Calculate the insurer's IRIS ratio 4 (surplus aid to policyholders' surplus) for 2012 and briefly describe the purpose of IRIS ratio 4.

b. (0.5 point)

Explain a possible reason for the unusual value of IRIS ratio 4 for this company.

c. (2.25 points)

Identify three IRIS ratios that are affected by the use of surplus aid, and calculate these ratios both before and after the adjustment reflecting the unusual value produced by IRIS ratio 4.

CONTINUED ON NEXT PAGE

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 19	
TOTAL POINT VALUE: 4.25	**LEARNING OBJECTIVE: C2**
SAMPLE/ACCEPTED ANSWERS	
Part a: 1.5 points	

Ceding Commissions = Ceding Commissions + Contingent 31.9+3.4 = 35.3M

Estimated reinsurance commission rate

=Ceding commissions from reinsurance, including contingent commissions / Total written premiums ceded to reinsurers (affiliates and non-affiliates)

= (31.9 + 3.4)/131.4 = 26.9%

Unearned Premium = all authorized & unauthorized for non-affiliates

= 23.1 + 1.6 + 3.4 + 1.3 + 5.3 + 1.6 + 12.2 + 5.9 = 54.4M

Surplus Aid = Estimated reinsurance commission rate x unearned premium on reinsurance ceded to non-affiliates

= 0.269 x 54.4M = 14.6M

IRIS ratio 4 = Surplus Aid / Policyholders' Surplus

= 14.6M / 77.1M

= 19.0%

The purpose of IRIS ratio 4 is intended to identify companies that rely heavily on reinsurance as means to enhance surplus.

Part b: 0.5 point

- Unusual values could be caused by:
    - Decrease to PHS (not an acceptable answer for this question)
    - Increase to Surplus Aid caused by increase in unearned premiums on reinsurance ceded to non-affiliates
    - Increase to Surplus Aid through a greater use of reinsurance as part of company strategy for growth or mix of business related to exposure or geography
    - Increase to Surplus Aid caused by increase in reinsurance commission rates
- For this specific company:
    - A relatively new company (6 years) may be increasing their writing potential by utilizing larger amounts of reinsurance as a means of risk transfer
    - Property insurers utilize reinsurance when business is in more catastrophe prone areas (would require assumption on mix of business and/or geographical considerations)
    - Large WC accounts may have catastrophic or excess exposure that could cause cash flow issues to a newer company
    - Reinsurance commissions are slightly up over 2011 (26.9% vs. 25.2%)

Other Answers:

- The Company's ceded written premium grew significantly from 2011 to 2012

versus its net. May be entering a new line of business and seeking reinsurance to cover the losses until it is comfortable with the expected loss activity.
- If insurer is growing rapidly to meet obligation it will show unusual value in ratio 4. Relying heavily on reinsurance to create surplus aid creates an unusual value.
- The write HO which is a CAT prone line of business. They may require extra reinsurance, thus receives more than usual commissions.
- Ratios 11-13 show deterioration year over year. Ratio 13 is unusual (>25%). This may indicate adverse development of reserves and the need for surplus relief.
- There was a large shift in premiums from 2010-2011 and a resulting shift in IRIS 11-13 indicating a change in focus or LOB. Insurer may have shifted to a LOB with more of a need for reinsurance.
- The Company ceded significantly more in the last year & may have a valid reason for this such as entering a new market, entering a new LOB, increasing capacity, etc. So they may leverage higher use if reinsurance until they better understand/can more comfortably manage the business.
- They are exposed to lower frequency-higher severity lines in workers comp, property, and GL so they need extra reinsurance to protect against catastrophe or large claims.

Part c: 2.25 points

- Gross Premiums Written to Policyholders' Surplus (ratio 1)
- Net Premiums Written to Policyholders' Surplus (ratio 2)
- Gross Change in Policyholders' Surplus (ratio 7)
- Gross Agents' Balances (in collection) to Policyholders' Surplus (ratio 10)
- Estimated Current Deficiency to Policyholders' Surplus (ratio 13)

<u>Adjustment:</u> When IRIS ratio #4 exceeds the usual range of 15%, the selected IRIS ratios should be recalculated with policyholders' surplus adjusted to remove surplus aid. [Source: NAIC p.13]

Any of the following five, with the exception of IRIS ratio 10, are acceptable:

- Gross Premiums Written to Policyholders' Surplus (ratio 1)
  i. = (611.7 + 39.0) / 77.1= **844.0%**
  ii. = (611.7 + 39.0) / (77.1 – 14.6) = **1041.4%** [Adjusted ex Surplus Aid]
     1. Alt Calculation: 844.0% / (1 – 0.19) = 1041.4%
- Net Premiums Written to Policyholders' Surplus (ratio 2)
  i. = (611.7 + 39.0 – 131.4) / 77.1 = **673.5%**
  ii. = (611.7 + 39.0 - 131.4) / (77.1 – 14.6) = **831.1%** [Adjusted ex Surplus Aid]
     1. Alt Calculation: 673.5% / (1 – 0.19) = 831.1%
- Gross Change in Policyholders' Surplus (ratio 7)
  i. = (77.1 – 67.5) /67.5 = **14.2%**
  ii. = [(77.1 – 14.6) –(67.5 – 8.7)] / (67.5 – 8.7) = **6.3%** [Adjusted ex Surplus Aid]
- Gross Agents' Balances (in collection) to Policyholders' Surplus (ratio 10)

-
   - i. Cannot calculate without Gross Agents' Balances in Collections
- Estimated Current Deficiency to Policyholders' Surplus (ratio 13)
   - i. Given as $\boxed{\textbf{27.4\%}}$
   - ii. Adjusted = 27.4% / (1-19.0%) = $\boxed{\textbf{33.8\%}}$
      1. Alt Calculation: 27.4% / (1 – 0.19) = 33.8%

EXAMINER'S REPORT

Part a

- Candidate was expected to calculate IRIS Ratio 4 and understand the purpose/importance of the ratio.
- This is question requires memorization & recall. Candidates generally scored well with minor mathematical errors.
- To obtain full credit, the candidate should have:
   - shown enough work to demonstrate knowledge of the calculation. For example: Surplus Aid = Ceding Commissions/Ceded WP x UEPR
   - performed mathematical calculation correctly
   - included the purpose of IRIS Ratio 4
- Common Errors
   - Mathematical errors or misuse of the information provided
   - Most common error - Did not calculate UEPR correctly
   - Did not calculate the ceding commission correctly (used UEPR as denominator rather than Written Premium or not including the contingent commission in the numerator)
   - Did not include the purpose of IRIS Ratio 4

Part b

- This question is an interpretation of IRIS 4 and the company-specific information provided in the stem
- To obtain full credit, the candidate should have:
   - Demonstrated knowledge of the causes of increased surplus aid, and
   - Utilized the information in the question to provide specific possible causes for <u>this company</u>
      - Types of business written
      - Exposure to catastrophe or excess losses
      - Growth of company
      - New company (in business for 6 years)
      - Deterioration of IRIS ratios 11-13
      - Increased use of reinsurance and increase in reinsurance commissions relative to prior years
- Multiple answers were acceptable for full credit
- Partial credit was given for:
   - High or increased commissions
   - Use of Pools
- Common Errors
   - Candidates provided generalized answers that did not relate to the Company. Examples of generalized answers that received less than full credit and did not relate

reasons back to the company:
- "Relying too heavily on reinsurance to improve ratios"
- "Ceding commission is too high"
- "Catastrophic Loss"
- " Through reinsurance to get surplus relief"

- Candidates did not utilize the historical information provided to identify financial trends
- Vague answers including:
  - "commissions"
  - "manipulate surplus"
  - "too much reinsurance"

Part c

- Candidate needs to identify other "Surplus Ratios" (3 of 5 possible) & compute the ratios with and without the surplus aid
- This is question requires memorization & recall. Candidates generally performed well with minor mathematical errors.
- To obtain full credit, the candidate should have:
  - List 3 impacted ratios
  - Calculate the ratios including the surplus aid (using Part A)
  - Calculate the ratios excluding the surplus aid (using Part A)
- Common Errors
  - Stating IRIS ratios 11 or 12 which utilize surplus values from prior years, so are not consistent with the current surplus aid
  - IRIS ratio 7 – the adjusted value required the calculation of the prior year's surplus aid to make the appropriate adjustment to the surplus value
  - Misapplication of the IRIS ratios (i.e. not including assumed premium in IRIS ratio 1)
  - Mathematical errors or misuse of the information provided
- Candidates can receive credit despite miscalculating Part A – calculations were evaluated using candidate's answers (or assumed IRIS ratio 4 values) to validate understanding of the IRIS ratio adjustment