

17. (2.25 points)

Given the following information from an insurance company's 2016 Annual Statement (all dollar figures are in thousands):

- Company net loss & LAE ratio is 75%
- Company expense ratio is 40%
- Policyholder dividend ratio is 10%
- Total adjusted capital is \$12,800

Given the following RBC charges for this insurer for 2016:

- R0 is \$0
- R1 is \$500
- R2 is \$1,500
- R3 is \$270
- R4 is \$9,700
- R5 is \$2,000

a. (0.75 point)

Calculate the 2016 RBC ratio.

b. (1.5 points)

Determine the 2016 RBC Action Level for the insurer, and briefly describe the actions required of both the regulator and the company under the RBC Model Act.

QUESTION 17**TOTAL POINT VALUE: 2.25****LEARNING OBJECTIVE: C2****SAMPLE ANSWERS****Part a: 0.75 point**Sample 1

RBC after covariance = $R0 + (R1^2 + R2^2 + R3^2 + R4^2 + R5^2)^{0.5} = 0 + [(500,000)^2 + (1,500,000)^2 + (270,000)^2 + (9,700,000)^2 + (2,000,000)^2]^{0.5} = 10,033,090$

RBC ratio = Total Adjusted capital / ACL = $12,800,000 / (10,033,090 * 0.5) = 255\%$

Sample 2

Moving half of R3 to R4

RBC after covariance = $R0 + (R1^2 + R2^2 + R3^2 + R4^2 + R5^2)^{0.5} = 0 + [(500,000)^2 + (1,500,000)^2 + (270,000/2)^2 + (9,700,000 + 270,000/2)^2 + (2,000,000)^2]^{0.5} = 10,160,977$

RBC ratio = Total Adjusted capital / ACL = $12,800,000 / (10,160,977 * 0.5) = 252\%$

Part b: 1.5 points

RBC ratio is between 200% and 300%, so a Trend test is needed.

Combined ratio = Loss & LAE ratio + Dividend ratio + Expense ratio = $75\% + 10\% + 40\% = 125\%$.

It is >120%, which means it fails the Trend test and thus the RBC action level is the Company Action Level.

Company actions: Must submit a plan of action to insurance commissioner of domiciliary state explaining how the company intends to obtain the needed capital or to reduce its operations or risks to meet the RBC standards.

Regulator actions: None initially

EXAMINER'S REPORT

Candidates were expected to know how to calculate the RBC Ratio from the individual charges, apply the trend test, determine the action level for the insurer, and describe the actions both the company and the regulator are required to take based on that level.

Candidates had difficulties identifying the need to perform the trend test and thus determining the accurate RBC action level and subsequent required actions for both sides in part b.

Part a

Candidates were expected to calculate the RBC ratio and show how they derived it from the total RBC after covariance.

Common mistakes include:

- Forgetting to multiply the total RBC after covariance by 0.5
- Multiplying the total RBC after covariance by 2 and not 0.5
- Flipping the formula where the RBC ratio is $ACL / \text{Total Adjusted capital}$ and not the correct way of $\text{Total Adjusted capital} / ACL$
- Not showing the R0 charge in the calculation of the total RBC after covariance

Part b

Candidates were expected to determine the RBC action level by recognizing the need to perform the trend test. Based on that action level, candidates were expected to describe the actions required by the company and the regulator.

Common mistakes include:

- Not recognizing the need to perform the trend test
- Not including dividend ratio as part of the calculation of the combined ratio
- Not calculating the combined ratio
- Not identifying the RBC action level
- Not describing the actions required by either the company or the regulator
- Using the wrong percentage threshold for failing the trend test

QUESTION 18**TOTAL POINT VALUE: 1.5****LEARNING OBJECTIVE: C2****SAMPLE ANSWERS**

Part a: 0.5 point

Sample answers for advantage of RBC ratio to assess the financial health of an insurer include:

- Formulaic and easy to understand
- RBC ratio is based on the financial statement, it is verifiable and hard to manipulate
- Formulaic, hard to manipulate, easy to compare across companies
- Rules based system is easy and objective for regulators to use consistently across insurers

Sample answers for disadvantage of RBC ratio to assess financial health of an insurer include:

- Doesn't capture all important risks, such as operational or catastrophe risk.
- RBC is formulaic, so it may not fit the situation of all companies
- Industry values are considered throughout much of the calculations rather than the insurers'.