21. (3.25 points)

Given the following information for an insurance company:

Risk charges under the NAIC's Risk-Based Capital (RBC) formula:

R_0 = \$12,000,000
R_1 = \$5,000,000
R_2 = \$6,000,000
R_3 = \$4,000,000
R_4 = \$20,000,000
R_5 = \$25,000,000

The reserve RBC exceeds the sum of the credit risk RBC for non-invested assets and reinsurance recoverables. This has already been contemplated in the R3 and R4 figures shown above.

Policyholders' surplus: \$35,000,000.
Tabular discount on workers compensation reserves: \$10,000,000
Tabular discount on medical reserves: \$1,000,000
Non-tabular discount: \$4,000,000

a. (1 point)

Identify and briefly describe two of the four major risk categories measured by the RBC formula.

b. (1 point)

Calculate the company's RBC ratio.

c. (0.25 point)

Identify the action level triggered by this RBC value.

d. (1 point)

Using the result from part b. above, describe the actions of both the regulator and the company under the RBC Model Act.

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reserves, and add in Part 3E. The most common error here was also the omission of the 2004 row.

b. This part was fairly straightforward, and many candidates provided the correct answer. The most common error was forgetting to subtract Part 4 (Bulk & IBNR) to derive the case outstanding.

c. The majority of candidates were able to successfully describe two or three additional functions of Schedule P, as there were many acceptable answers to this part.

21. <u>Sample Answers</u>

a. Candidates could select 2 of the 4 risks:
- Asset Risk – either of the following:
  - The risk that bond will default, the market value of stock and other investments will fluctuate
  - Risks that assets such as bond and equity investments lose value
- Credit Risk – either of the following:
  - The risk that counterparties will be unable or unwilling to pay such as reinsurance recoverables default
  - Risk that counterparties such as reinsurers will not pay as expected
- Underwriting Risk – either of the following:
  - Risk that losses will develop adversely and risk that business written over the coming year will be unprofitable
  - Risk that premiums will be insufficient to cover losses & expense and that reserves may develop adversely
- Off-Balance Sheet Risk – either of the following:
  - Risk related to having insurance subsidiaries and off-balance sheet items (R0)
  - This includes pass-throughs from affiliates; outside the square root covariance adjustment; & other misc. items like non-controlled assets & contingent liabilities

b.
- RBC (in $millions) = 12 + SQRT[$5^2+6^2+4^2+20^2+25^2$] = $\boxed{\$45.196M}$
- Authorized Control Level (ACL) = 50% * RBC = $\boxed{\$22.598M}$
- Adjusted Capital = PHS – Non-Tab discount – Tab discount on Medical = 35 – 4 – 1 = $\boxed{30M}$
- RBC Ratio = Adjusted Capital / ACL = 30.0/22.6 = $\boxed{\mathbf{1.327}}$

c. Regulatory Action Level

d. Actions

--Company – either of the following:

i. The company must submit a plan to the commissioner on how it plans to reduce risks or increase surplus

ii. Company must submit a plan to regulator detailing how it will raise capital or reduce risk

--Regulator – either of the following:

i. Regulator may ask the insurer to take corrective action such as limit new business but this action is discretionary

ii. Regulator has the power to take corrective action against insurer but is not required to do so.

21. Examiner’s Report

All parts of this question involved straightforward recall of basic RBC concepts.

a.

- The most common error was candidates listing R4 Reserve Risk and R5 Written Premium Risk as the 2 risks. These are both part of Underwriting Risk as described in both the Porter and Odomirok readings. Partial credit was given for this answer.
- Similarly, R1 Fixed Income Risk and R2 Equity Risk are both part of Asset Risk. Partial credit was given for this answer.
- R4 Reserve Risk is the risk that the company’s recorded loss & LAE will develop adversely under assumption that current reserves are adequate; it does not account for reserve inadequacy (insufficient reserves). No credit was given for a description of insufficient or inadequate reserves.

b.

- Candidates were required to calculate the RBC ratio as described in the Odomirok reading.
- The most common errors were miscalculation of Adjusted Capital (Policyholder Surplus) with the tabular discount and failure to apply the ACL adjustment.
- A less common error was the miscalculation of RBC with a duplicate application of the reinsurance charge adjustment. As stated in the question “The Reserve RBC exceeds the sum of the credit risk RBC for non-invested assets and reinsurance recoverable. *This has already been contemplated in the R3 and R4 figures shown above.”* No adjustment was required for R3 and R4 prior to calculating the covariance adjustment.
- Another frequent error was incorrectly stating the RBC ratio formula by inversing the ratio (i.e. PHS/(Adjusted Capital x 0.50))

c.

- Incorrect answers tended to be with the application of the ACL adjustment to the ranges.

d.

- At the Regulatory Action Level (correct response), the most common error was failing to indicate that all regulator actions were discretionary; nothing is mandated.
- Credit was not given for indicating that the company needed to “improve the RBC ratio”. More specific actions were required such as reduce risks, increase surplus, raising additional capital, etc.
- For the Authorized Action level (resulting from an incorrect calculation in Part B), the most common error was listing the company actions similar to the Regulatory Action Level (i.e submitting a plan for Capital improvement or risk reduction) when no company action is required.

22. Sample Answers

a. Any two of the following:

- The less that is known about the current estimate and its trend, the higher the risk margin should be. Generally, WC should have a higher risk margin than AL as it is longer-tailed and subject to uncertainties such as medical inflation.