

EXAM 6 – UNITED STATES, FALL 2015

17. (3 points)

Assume an insurer’s investment portfolio consists of holdings from 12 issuers as shown below:

Issuer Number	Unaffiliated Bonds NAIC Class 02	Unaffiliated Common Stock	Total Assets Subject to Asset Concentration
1	5,000	2,000	7,000
2	4,500		4,500
3	4,000	250	4,250
4	4,000		4,000
5		2,000	2,000
6		1,500	1,500
7	1,000	300	1,300
8		1,250	1,250
9	500	700	1,200
10		900	900
11	550	200	750
12	600		600
Total	20,150	9,100	29,250

NAIC Bond Size Adjustment Factor Weights

	# of Bond Issuers	Weights
First 50	8	2.5
Next 50	0	1.3
Next 300	0	1
More than 400	0	0.9
Total	8	

RBC Factors by Asset Category

Asset Category	RBC Factor
Unaffiliated Bonds NAIC Class 02	0.01
Unaffiliated Common Stock	0.15

a. (1.5 points)

Calculate the NAIC’s  $R_1$  risk charge.

b. (1 point)

Calculate the NAIC’s  $R_2$  risk charge.

c. (0.5 point)

Briefly describe two ways the insurer could reduce the  $R_1$  risk charge without reducing the size of the bond portfolio.

**SAMPLE ANSWERS AND EXAMINER'S REPORT**

<b>QUESTION 17</b>	
<b>TOTAL POINT VALUE: 3</b>	<b>LEARNING OBJECTIVE: C2</b>
<b>SAMPLE ANSWERS</b>	
<b>Part a: 1.5 points</b>	
<p>R1 Fixed Income            Bond Charge: <math>20,150 \times 0.01 = 201.5</math>            Bond Size Factor: 2.5            Bond Size Charge: <math>(2.5-1) \times 201.5 = 302.25</math>            Asset Concentration: Total bond top 10 <math>(20,150 - 550 - 600) \times 0.01 = 190</math>            R1 Charge = <math>201.5 + 302.25 + 190 = 693.75</math></p>	
<b>Part b: 1 point</b>	
<p>R2 Charge            Stocks: <math>9,100 \times 0.15 = 1,365</math>            Asset Concentration Factor: <math>(9,100 - 200) \times 0.15 = 1,335</math>            R2 charge = <math>1,365 + 1,335 = 2,700</math></p>	
<b>Part c: 0.5 point</b>	
<p>Any two of the following:</p> <ul style="list-style-type: none"> <li>• Buy bonds from a larger set of issuers.</li> <li>• Invest in better rated bonds.</li> <li>• Shift portion of portfolio to US government guaranteed bonds which have an RBC factor of 0.</li> <li>• Shift from class 02 to class 01 bonds where the charge is lower, 0.3%</li> <li>• The insurer could place more bonds with issuer 11 and 12 (and less in issuers 1-10) so they wouldn't be included in the asset concentration factor.</li> <li>• If it increased stock holdings with issuers with low bond holdings, then it would incur lower asset concentration factors within R1 (but higher in R2)</li> </ul>	
<b>EXAMINER'S REPORT</b>	
<p>The candidate was expected to know how to calculate RBC charges for R1 and R2 as well as how portfolio changes can affect these charges. Many candidates demonstrated knowledge of the general concepts but failed to correctly complete the calculations.</p>	
<b>Part a</b>	
<p>Candidates were expected to accurately calculate the total R1 charge as well as each piece: bond charge, bond size charge, and asset concentration charge. Common errors included applying the bond size factor to the asset concentration charge, omitting the asset concentration charge, omitting the bond charge, and calculating the asset concentration charge using the formula for loss or premium concentration factors.</p>	
<b>Part b</b>	
<p>Candidates were expected to know how to calculate an R2 charge including the asset concentration factor and the stock charge. Common errors included omitting the asset concentration charge and calculating the asset concentration charge using the formula for loss or premium concentration factors.</p>	
<b>Part c</b>	
<p>The candidate was expected to know how adjustments to the portfolio could affect the R1 charge. Candidates needed to have two separate recommendations that would reduce the R1 charge. Common errors included giving two answers that were not substantially different, suggesting to</p>	

## **SAMPLE ANSWERS AND EXAMINER'S REPORT**

buy more bonds without suggesting an increase in issuers, reducing the portfolio (since the question specifically states this is not allowed), and suggesting a method that would only redistribute bond holdings without reducing the asset concentration factor.