(RBC - 15F.17 practice 01) 1a-Question

Reading: Odomirok.19-RBC Model: 2015.Fall #17

Problem Type: Calculate RBC charge R_{1.}

Given

			Assets
	Unaffiliated	Unaffiliated	subject to
	Bonds NAIC	Common	Asset
#	Class 02	Stock	Concentration
1	28,000	0	28,000
2	0	24,100	24,100
3	0	13,300	13,300
4	11,700	0	11,700
5	7,400	0	7,400
6	0	5,900	5,900
7	0	3,800	3,800
8	0	3,500	3,500
9	2,500	0	2,500
10	0	1,700	1,700
11	700	300	1,000
12	700	0	700
	51,000	52,600	103,600

Notation	
basic	basic R ₁ charge
BSC	Bond Size Charge
BSF	Bond Size Factor
ACC	Asset Contentration Charge
$R_1 =$	basic + BSC + ACC

103,600 * Issuers are **sorted** from largest to smallest.

Bond Size Adjustment Factor WEIGHTS

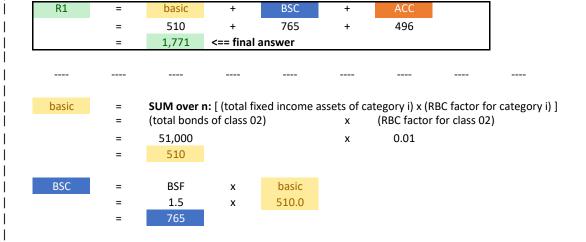
bond count	# issuers	weights
1-50	6	2.5
51-100	0	1.3
101-400	0	1.0
> 400	0	0.9

* BSF = sumproduct(issuers, weights) / sum(issuers) - 1 (shout-out to AT!)

RBC Factors by Asset Category

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

Find Calculate the RBC charge R_{1.}



Notes on the BSF term (Bond Size Factor)

- ==> Since we have at most 12 issuers in this problem, BSF always equals 1.5
- ==> In general BSF = sumproduct(# issuers, weights) / sum(# issuers) 1
- ==> if (bond count) > 1300 then the portfolio will receive a discount to their RBC charge for bonds (shout-out to AT!)
- ==> BSF decreases as bond count increases

(RBC - 15F.17 practice 02) 2a-Question

Reading: Odomirok.19-RBC Model: 2015.Fall #17

Problem Type: Calculate RBC charge R_{1.}

Given

			Assets
	Unaffiliated	Unaffiliated	subject to
	Bonds NAIC	Common	Asset
#	Class 02	Stock	Concentration
1	11,500	11,500	23,000
2	0	13,800	13,800
3	0	11,200	11,200
4	0	5,600	5,600
5	2,100	1,500	3,600
6	0	2,200	2,200
7	1,000	800	1,800
8	0	1,500	1,500
9	0	1,100	1,100
10	0	800	800
11	0	600	600
12	0	500	500
	14.600	51.100	65.700

Notation	
basic	basic R ₁ charge
BSC	Bond Size Charge
BSF	Bond Size Factor
ACC	Asset Contentration Charge
$R_1 =$	basic + BSC + ACC

65,700 * Issuers are **sorted** from largest to smallest.

Bond Size Adjustment Factor WEIGHTS

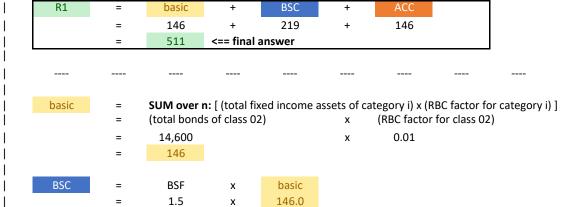
bond count	# issuers	weights
1-50	3	2.5
51-100	0	1.3
101-400	0	1.0
> 400	0	0.9

* BSF = sumproduct(issuers, weights) / sum(issuers) - 1 (shout-out to AT!)

RBC Factors by Asset Category

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

Find Calculate the RBC charge R_{1.}



Notes on the BSF term (Bond Size Factor)

- ==> Since we have at most 12 issuers in this problem, BSF always equals 1.5
- ==> In general BSF = sumproduct(# issuers, weights) / sum(# issuers) 1
- ==> if (bond count) > 1300 then the portfolio will receive a discount to their RBC charge for bonds (shout-out to AT!)
- ==> BSF decreases as bond count increases