22. (2.25 points)

Given the following data as of December 31, 2018:

Cumulative Paid Claims ($000) Gross of Salvage & Subrogation as of (months)			
Accident Year	12	24	36
2015	17,500	21,500	24,000
2016	19,000	23,500	25,700
2017	18,500	22,800	
2018	18,100		

Cumulative Received Salvage and Subrogation ($000) as of (months)			
Accident Year	12	24	36
2015	1,150	4,050	5,300
2016	1,180	4,300	5,680
2017	1,200	4,250	
2018	850		

1.40	12 to ultimate development factor for paid claims gross of salvage & subrogration

- There is no development beyond 36 months.

a. (1.75 points)

Estimate the salvage and subrogation recoverable for accident year 2018 using the ratio approach. Justify the selected ultimate salvage and subrogation ratio.

b. (0.5 point)

Briefly discuss two advantages of the ratio approach as compared to the development approach.

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QUESTION 22	
TOTAL POINT VALUE: 2.25	LEARNING OBJECTIVE(S): B6
SAMPLE ANSWERS	
Part a: 1.75 points	

Sample 1

Ratio of S&S / paid claims

AY	12	24	36
15	0.0657	0.1884	0.2208
16	0.0621	0.1830	0.2210
17	0.0649	0.1864	
18	0.0470		

AY	12-24	24-36
15	2.867	1.172
16	2.947	1.208
17	2.872	

AY	ult ratio
15	0.2208
16	0.2210
17	0.1864x1.19=0.221
18	0.0470x2.895x1.19=0.1619

The 2018 ult ratio seems a bit low, I'll assume it's due to a random fluctuation on the early 12 month maturity that's low and judgmentally select 0.21 as the ratio

S&S recoverable = (18,100x1.4x0.221 – 850) x 1000 = 4,750,140

Sample 2

Ratio of S&S / paid claims

AY	12	24	36
15	0.066	0.188	0.221
16	0.062	0.183	0.221
17	0.065	0.186	
18	0.047		

Because the ratio difference from AY 2015-2017 is less. So we use 0.221 as the ultimate salvage and subrogation ratio.

Salvage and subrogation for AY 2018 = 18100 x 1000 x 1.40 x 0.221 = 5600140

Sample 3

Ratio of S&S to gross paid claims

AY	12	24	36
15	6.57%	18.84%	22.08%
16	6.21%	18.30%	22.10%
17	6.49%	18.64%	

18 4.70%

ATA factor

AY	12-24	24-36	36-Ult
15	2.87	1.17	
16	2.95	1.21	
17	2.87		
Simple avg	2.90	1.19	1

We can see that S&S in AY 2018 seems to be lower than previous years, assume this will be the future pattern so I will use 4.70% instead of average ratio of 2015-2017

S&S recoverable for AY 2018 = 18100x1.4x4.70%x2.9x1.19-850 = 3260

Part b: 0.5 point

Sample 1

1. The ratio approach calculates ultimate ratios of salvage and subrogation to paid claims as a diagnostic. If a ratio of a particular year seems unreasonable, a more appropriate ratio can be used.
2. The LDFs based on the ratio approach tend to be less leveraged than the LDFs based on received salvage and subrogation dollars.

Sample 2

- Can easily judgmentally select a more appropriate ratio
- More stable in earlier development not heavily leveraged like development approach

Sample 3

1) The LDFs of ratios are tend to be less volatile than LDFs of dollars
2) It recognizes the relationship between S&S and paid claims

EXAMINER'S REPORT

Candidates were expected to understand the method of estimating salvage and subrogation through the ratio approach and the benefits of using the ratios over development of S&S dollars.

Part a

Candidates were expected to apply the development method to the ratios calculated and from S&S and paid claims.

Credit was also awarded if candidates recognized the 2015 and 2016 ultimate ratios were fully developed and could be used to determine the 2018 ultimate without providing ratio development tables, however, justification was required in the selection to receive full credit.

Common mistakes included:

- Calculating the ultimate S&S, but not calculating the recoverable
- Developing S&S dollars directly to determine Ultimate S&S
- Calculating ultimate losses using paid development triangle rather than the stated 12-Ult factor

Part b
Candidates were expected to know two advantages of the ratio approach over dollar development. Common mistakes included: • Listing only one reason • Identifying a relationship between S&S and claims/losses but not specifying paid claims/losses • Stating that ratio adjusts for changes in mix of business