

Reading: Friedland 16 (ALAE)
Model: 2019.Spring #24
Problem Type: Additive or Multiplicative approach for ALAE

(Fr16.ALAE) 01a-Question

Problem Use the **multiplicative** approach to estimate the **ultimate** ALAE for AY **2018**

cumulative paid claims:

AY	12	24	36	48
2015	3,800	10,640	15,960	17,556
2016	3,900	10,920	15,600	
2017	3,850	11,858		
2018	4,050			

cumulative paid ALAE:

AY	12	24	36	48
2015	77	316	512	571
2016	81	337	517	
2017	75	334		
2018	82			

selected ultimate claims by AY

AY	ult clms
2015	17,500
2016	17,900
2017	17,600
2018	18,500

<===

sometimes you are not given the ultimate claims

- you would then have to calculate them using an appropriate method

- see 2016.Spring #23

Step 1: Ratio of *cumulative* paid ALAE to *cumulative* paid claims:

AY	12	24	36	48
2015	2.03%	2.97%	3.21%	3.25%
2016	2.08%	3.09%	3.31%	
2017	1.95%	2.82%		
2018	2.02%			

Step 2: Development triangle (*either additive or multiplicative as appropriate*):

AY	12-24	24-36	36-48	48-	
2015	1.463	1.081	1.012		<=== MULTIPLICATIVE development
2016	1.486	1.071			
2017	1.446				
2018					
selected	1.465	1.076	1.012	1.000	<=== tail = 0.0 if additive <u>OR</u> 1.0 if multiplicative
cum	1.595	1.089	1.012	1.000	<=== MULTIPLICATIVE: selected x (previous cum)
Ult Ratio	3.22%	3.07%	3.35%	3.25%	<=== MULTIPLICATIVE: cum x (latest diagonal from Step 1)

AY	2018	2017	2016	2015	
ult clms	18,500	17,600	17,900	17,500	<=== given information (provided here for convenience)
pd ALAE	82	334	517	571	

Step 3: Ultimate ALAE = (Ultimate Ratio) x (Ultimate Claims)
 Unpad ALAE = (Ultimate ALAE) - (Paid ALAE)

AY	Ult ALAE	UnPd ALAE
2015	568.8	(2.3)
2016	599.7	82.7
2017	540.3	206.3
2018	595.7	513.7
	2,304.4	800.4

Step 4: ultimate ALAE for AY 2018 = 595.7 <=== final answer