Reading: Friedland 07 (Development Technique)   Fr-07 (021) 2017.Fall Q19 (Problem)
Model: 2017.Fall #19
Problem Type: Reported Claims Development

Find

a Calculate ultimate claims for AY 2022 and 2023 using data as of year-end 2023

b Calculate a diagnostic showing a recent operational change and describe a likely scenario

Given

cumulative reported claims

AY	12	24	36	48
2020	10,000	15,000	18,000	19,800
2021	11,000	16,500	19,800	
2022	12,650	18,975		
2023	14,500			

cumulative paid claims

AY	12	24	36	48
2020	4,000	10,000	15,000	18,000
2021	4,400	11,000	16,000	
2022	4,840	12,100		
2023	5,324			

reported claims development technique ultimates:

AY	amt
2020	20,790
2021	22,869

a **link ratios for reported claim triangle**

AY	12-24	24-36	36-48	48-ult
2020	1.500	1.200	1.100	
2021	1.500	1.200		
2022	1.500			
2023				
selected	1.500	1.200	1.100	**1.050**

Trick: The triangle is not fully developed as of 48 months. You must calculate a <u>tail factor</u> using AY 2020 information as shown below.

= 20,790 / 19,800

AY 2020 ultimate   AY 12 @48 months

calculate age-to-ultimate LDFs

	12-ult	24-ult	36-ult	48-ult
age -> ult	2.079	1.386	1.155	**1.050**

<====== (**selected**) x (prior [age -> ult])
(calculate from right-to-left)

calculate ultimate losses based on latest reported losses

	'23@12	'22@24	'21@36	'20@48
diagonal	14,500	18,975	19,800	19,800
ultimate	30,146	26,299	22,869	20,790

<====== (**diagonal**) x (age -> ult)

Final answers:

AY 2022 ultimate loss based on reported losses: 26,299.350

AY 2023 ultimate loss based on reported losses: 30,145.500

b Since we're only given cumulative reported and paid triangles, we don't have many options for diagnostics. We could calculate incremental triangles, but we'll first try the obvious and calculate **paid / reported**.

cumulative paid / reported

AY	12	24	36	48
2020	0.40	0.67	0.83	0.91
2021	0.40	0.67	0.81	
2022	0.38	0.64		
2023	0.37			

Looking down the columns, we see there has been a general <u>**decrease**</u> in the paid/reported ratio

This likely means: *(paid values went down) OR (reported values went up) OR (a combination of both)*

Possible scenarios corresponding to these observations are:

[1]   claims handling rules were TIGHTENED

[2]   case reserve adequacy INCREASED