

Reading: Friedland 12 (Case Outstanding Methods)
Model: 2019.Fall #18
Problem Type: Reserving Methods - COS (Case O/S Method #1)

F-12 (010) 2019.Fall Q20 (Problem 1)

Find Use a Case O/S method to calculate the **unpaid** for AY **2025**

Given

AY	Cumulative Paid Loss (\$000s) (CPL)			
	12	24	36	48
2022	1,200	2,325	2,900	3,100
2023	1,800	3,300	4,100	
2024	1,500	2,800		
2025	1,700			

AY	Case Outstanding (\$000s) (COS)			
	12	24	36	48
2022	1,500	800	400	160
2023	2,000	1,150	575	
2024	1,750	975		
2025	2,200			

48-ultimate paid loss to prior case O/S factor	1.15
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** no development past 60 months*

Step 1 calculate IPL (Incremental Paid Loss)

(Solution 1)

AY	Incremental Paid Loss (\$000s) (IPL)			
	12	24	36	48
2022	1,200	1,125	575	200
2023	1,800	1,500	800	
2024	1,500	1,300		
2025	1,700			

Sometimes you're given the incremental paid loss. If so, then step 1 is not necessary.

Step 2a calculate (current case) / (prior case)

AY	Current/Prior COS			
	24/12	36/24	48/36	60/48
2022	0.533	0.500	0.400	
2023	0.575	0.500		
2024	0.557			
2025	0.555	0.500	0.400	0.000

Demonstration for AY 2022 calculations:

			current case O/S		prior case O/S
24/12	0.533	=	800	/	1,500
36/24	0.500	=	400	/	800
48/36	0.400	=	160	/	400

<-- default selection = all period average

Step 2b project case O/S using selections from step 2a

AY	projected Case Outstanding (COS)			
	12	24	36	48
2022				160
2023			575	230
2024		975	488	195
2025	2,200	1,221	611	244

Demonstration for AY 2025 projections:

	projection		selection		prior case O/S
24 mths	1,221	=	0.555	x	2,200
36 mths	611	=	0.500	x	1,221
48 mths	244	=	0.400	x	611

Step 3a calculate IPL / (prior case)

AY	IPL / (prior case)			
	24/12	36/24	48/36	60/48
2022	0.750	0.719	0.500	
2023	0.750	0.696		
2024	0.743			
2025	0.748	0.707	0.500	

Demonstration for AY 2022 calculations:

			current IPL		prior case O/S
24/12	0.750	=	1,125	/	1,500
36/24	0.719	=	575	/	800
48/36	0.500	=	200	/	400

<-- default selection = all period average

Step 3b project IPL using selections from step 3a

AY	projected Incremental Paid Loss (IPL)				
	12	24	36	48	60
2022					184
2023				288	265
2024			689	244	224
2025	1,646	863	306		281

Demonstration for AY 2025 projections:

	projection		selection *		prior case O/S
24 mths	1,646	=	0.748	x	2,200
36 mths	863	=	0.707	x	1,221
48 mths	306	=	0.500	x	611
60 mths	281	=	1.150	x	244

Note: The IPL projection always has 1 extra column. In this case 60-months. We use the 48-month case O/S to project the IPL out to 60 months.

* The 60-mth selection was given info. (It was not selected in step 3a)

Final calculate ultimate & unpaid amounts:

unpaid = sum of rows in step 3b
ultimate = sum of rows in step 3b + last diagonal of CPL

AY	ultimate	unpaid
2022	3,284	184
2023	4,653	553
2024	3,957	1,157
2025	4,796	3,096

Pay attention to whether the question asks for ultimate or unpaid. Also, pay attention to which AY is being asked about.

The final unpaid for AY 2025 is 3,096 <-- final answer