Reading: Friedland 17 (ULAE)
Model: 2019.Fall #24
Problem Type: Kittel approach for ULAE

F-17 (018) 2019.Fall Q24 (Problem)

Problem Use the Kittel approach to estimate the unpaid ULAE at CY 2024 year-end

55% <== Expected Clams Ratio (ECR)
claims-made <== policy type

CY	paid claims	incurred claims	paid ULAE
2021	16,591	32,700	1,991
2022	16,400	35,800	1,825
2023	18,100	34,500	1,825
2024	17,100	32,400	1,825

Report Year	earned premium	paid claims	reported claims	% unrpt'd
2021	68,000	20,900	28,700	12.0%
2022	65,900	12,300	23,500	21.6%
2023	66,700	7,300	19,000	36.7%
2024	64,000	4,200	17,100	68.4%

Step 1: Kittel ULAE ratio ==> (paid ULAE) / AVG [(paid claims) , (incurred claims)]

CY	paid ULAE	average (pd, inc)	ULAE ratio
2021	1,991	24,646	8.1%
2022	1,825	26,100	7.0%
2023	1,825	26,300	6.9%
2024	1,825	24,750	7.4%
			7.4%

<== selected (average)

Sometimes there is a trend in ULAE ratios. If so, you may need to use judgement instead of just selecting the average

Step 2a calculate ultimate (use Bornhuetter-Ferguson reported method)

(usually, we are given case O/S and IBNR in these types of problems but here we have to calculate it ourselves)

AY	ultimate	=	reported	+	%unrptd	x	ECR	x	EP
2021	33,188	=	28,700	+	12.0%	x	55%	x	68,000
2022	31,329	=	23,500	+	21.6%	x	55%	x	65,900
2023	32,463	=	19,000	+	36.7%	x	55%	x	66,700
2024	41,177	=	17,100	+	68.4%	x	55%	x	64,000
	138,157		88,300						

Step 2b calculate case O/S and IBNR in total for all years

case O/S	=	reported	-	paid	=	88,300	-	44,700	=	43,600
IBNR	=	ultimate	-	reported	=	138,157	-	88,300	=	49,857

Trick: Since these policies are **claims-made**, there is no pure IBNR (no IBNYR).

total IBNR	=	IBNER	+	IBNYR
49,857	=	IBNER	+	0

Therefore IBNER = 49,857

Step 3 apply formula for unpaid ULAE

unpd ULAE	=	ULAE ratio	x [50% x (	case	+	IBNER	)	+ 100% x	IBYNR
	=	7.4%	x [50% x (	43,600	+	49,857	)	+ 100% x	0
	=	7.4%	x	46,729					
	=	3,458							

(final answer)

Note: Part (b) of this exam problem asked how the calculations would change if the policies were "occurrence" instead of claims-made.

The answer is that "occurrence" policies have pure IBNR (IBYNR). You could use the same formula as in Step 3, but you would need a way of separating the total IBNR into its components IBNER and IBNYR.