

24. (2.25 points)

Given the following information, as of December 31, 2018:

Calendar Year	Paid Claims	Incurred Claims	Paid ULAE
2015	18,700	35,500	1,870
2016	19,200	36,500	1,890
2017	18,900	36,400	1,910
2018	19,800	37,400	1,990

Report Year	Earned Premium	Paid Claims	Reported Claims	Percent Unreported
2015	77,600	22,400	29,500	10.7%
2016	78,000	14,300	26,200	23.1%
2017	77,800	5,500	20,700	55.9%
2018	77,900	2,800	19,000	76.3%

- The expected claims ratio for this book of business is 45%.
- All policies are claims-made.

a. (1.5 points)

Calculate unpaid ULAE at December 31, 2018 using the Kittel refinement.

b. (0.75 point)

Fully describe how the calculation in part a. above would change if the policies for this book of business were occurrence instead of claims-made.

FALL 2019 EXAM 5 – SAMPLE ANSWERS AND EXAMINER’S REPORT

QUESTION 24	
TOTAL POINT VALUE: 2.25	LEARNING OBJECTIVE(S): B3, B7
SAMPLE ANSWERS	
Part a: 1.5 points	
<u>Sample 1</u>	
Kittel claims basis = .5 (Paid) + .5 (Inc)	
	ULAE Ratio
2015 .5 (18700) + .5 (35500) = 27100	1870/27100 = .069
2016 27850	0.068
17 27650	0.069
18 28600	<u>0.07</u>
	Select straight avg,
	see no pattern
	assume random variation
	.069 = w*
unpaid ULAE = .069 (.5 (Case + IBNER) +Pure IBNR)	
Use BF Reported Method to estimate ult claims	
2015 29500 + 77600 (.45) 0.107 =	33236.44
2016 26200 + 78000 (.45) 0.231 =	34308.1
17 20700 + 77800 (.45) 0.559 =	40270.49
18 19000 + 77900 (.45) 0.763 =	<u>45747</u>
	Total est ult 153562
Total Paid = 22400 + 14300 + 5500 + 2800	
= 45,000	
Total Rept = 95400	
case = 95400 - 45000 = 50400	
claims made data so no pure IBNR all	
must be IBNER	
IBNER = 153562 - 95400 = 58162	
unpaid ULAE = .069 (.5 (50400 + 58162) + 0) =	
	<u>\$3,745</u>
<u>Sample 2</u>	
<u>Year</u>	<u>Ratio of the Paid ULAE to average of paid and incurred</u>
2015	$1870 / \frac{1}{2} (18,700+35,500) = 7\%$
2016	6.8%
2017	7%
<u>2018</u>	<u>7%</u>
Select	7%

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Case + IBNER = Ultimate - Paid for the claims-made policies
Will estimate ultimate claims using BF method

<u>RY</u>	<u>Case + IBNER</u>
2015	$29,500 + 77,600 \times 0.45 \times 10.7\% - 22,400 = 10,836.4$
2016	20,008
2017	34,770
<u>2018</u>	<u>42,947</u>
Total	108,562

Unpaid ULAE at Dec 31, 2018 = $7\% \times (\frac{1}{2} \times 108,562 + 0) = 3800$

Part b: 0.75 point

Sample 1

Unpaid ULAE is calculated by w [Pure IBNR + 0.5 (Case + IBNER)]. If it is occurrence policy, we would have the pure IBNR component in ULAE calculation.

Sample 2

You would have to estimate the amount of pure IBNR and then multiply the ULAE ratio by the sum of 100% of the pure IBNR and 50% of the sum of the case reserve and IBNER.

EXAMINER’S REPORT

Candidates were expected to know how to estimate unpaid ULAE using the Kittel refinement, and describe the difference between occurrence and claims-made policies under the Kittel refinement.

Part a

Candidates were expected to estimate the ULAE ratio under Kittel refinement, use Incurred Bornhuetter-Ferguson method to estimate the total IBNR, and calculate the Unpaid ULAE under the assumptions of the Kittel refinement.

Common mistakes included:

- Using the wrong basis as the denominator to calculate ULAE ratio
- Calculating IBNR, case and unpaid ULAE for only one year
- Including wrong components, such as ultimate or reported, in the formula under Kittel refinement
- Giving wrong weights for each component of the formula
- Treating the IBNR for claims made policies as pure IBNR
- Not including the IBNR component in the calculation of unpaid ULAE
- Only identifying formula for Kittel refinement but not doing any calculation

Part b

Candidates were expected to know the different components of IBNR for between the claims made policies and the occurrence policies, and how Kittel refinement treats pure IBNR (IBNYR) and IBNER differently.

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Comment mistakes included:

- Failing to identify occurrence policies would include pure IBNR (IBNYR)
- Giving wrong weights to pure IBNR and IBNER under Kittel refinement
- Answering question from perspective of claims-made rather than occurrence