17. (2.25 points)

Given the following information:

Accident	Reported Claims ($000)			
Year	12 Months	24 Months	36 Months	48 Months
2011	722	844	897	942
2012	758	898	963	
2013	818	980		
2014	931			

Calendar Year	On-level Earned Premium ($000)
2011	1,300
2012	1,325
2013	1,350
2014	1,375

- Annual claims trend = 4%.
- Assume no development beyond 48 months.

a. (0.75 point)

Calculate the estimated ultimate claims for accident year 2014 using the reported development technique.

b. (1.5 points)

Calculate the estimated ultimate claims for accident year 2014 using the expected claims technique. Justify the expected loss ratio selection.

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QUESTION 17

TOTAL POINT VALUE: 2.25 | **LEARNING OBJECTIVE: B2, B3**

SAMPLE ANSWERS

Part a: 0.75 point

Age-to-Age Factors				
Accident Year	12-24	24-36	36-48	
2011	1.169	1.063	1.050	
2012	1.185	1.072		
2013	1.198			
Derivation of Age-to-Ultimate Factors				
Accident Year	12-24	24-36	36-48	To Ult
Volume-weighted	1.185	1.068	1.050	
CDF	1.328	1.121	1.050	1.000

2014 Projected Ultimate = 931 x 1.328 = 1,237

Part b: 1.5 points

AY/CY	OLEP	Trended Ult. Loss	ECR
2011	1300	$942 \times 1 \times 1.04^3 = 1059.62$	81.5%
2012	1325	$963 \times 1.050 \times 1.04^2 = 1093.65$	82.5%
2013	1350	980 x 1.121 x 1.04 = 1142.52	84.6%

There is an increasing trend in the loss ratios. Therefore, I will select the average of the latest 2 years to be more responsive to the current condition while accounting for stability and credibility. (82.5% + 84.6%)/2 = 83.6%

Ultimate Claims = 0.836 * 1,375 = $1,149.50

EXAMINER'S REPORT

This question tested two common techniques. Candidates scored well on this problem.

Part a

The candidate was expected to know how to calculate age-to-age factors and make a selection for each age-to-age period. Candidates were then expected to use this to compute an age-to-ultimate factor and apply that to a provided reported loss to calculate an ultimate loss. Acceptable alternative answers included using a volume weighted average, a simple average of the factors, or a geometric average of the factors. Credit was also awarded if the candidate noted an increasing trend from accident year to accident year and selected an average using the latest two years or just the latest year.

Common errors involved calculation errors and over-complicating the question. For example, some candidates attempted a Berquist-Sherman technique to answer the question even though the question did not provide sufficient data for this method.

Part b

The candidate was expected to know the expected claim technique, select appropriate years to use in the estimate, and calculate an expected loss ratio. The candidate was then expected to apply this loss ratio to a provided earned premium in 2014 to get an ultimate loss amount for 2014. Alternative loss development factors were accepted provided they were calculated in part a.

To earn full credit, the candidate was also expected to justify the selection of expected loss ratio. Credit was awarded to any justification which the data supported.

Candidates generally performed well on this part. The most common mistakes included

- Failing to state an acceptable justification
- Incorporating 2014 into the estimate
- Failing to correctly incorporate the 4% claims trend
- Failing to correctly incorporate the loss development factors calculated in part a
- Calculation errors