

**P. 1132 and 1183, Q.10.81**, should have been:

(5, 11/17, Q.10) (1.75 points) Given the following:

<u>Territory</u>	<u>True Relativity</u>	<u>Univariate Indicated Relativity</u>	<u>Loss &amp; ALAE (\$000)</u>
1	0.50	0.46	3,680
2	1.00	1.00	8,000
3	1.20	1.28	11,636

<u>Territory</u>	<u>Earned Exposures (000)</u>		
	<u>Class A</u>	<u>Class B</u>	<u>Class C</u>
1	150	70	110
2	105	115	110
3	70	180	125

<u>Class</u>	<u>A</u>	<u>B</u>	<u>C</u>
<u>Charged Factor</u>	0.85	1.15	1.00

- (0.5 point) Explain why the univariate indicated relativities are different from the true relativities.
- (1.25 points) Calculate territory relativities using the adjusted pure premium method, keeping territory 2 as the base level.

**10.** (a) The univariate indicated relativities ignore the different mix of classes by territory that is present here, which creates a problem when as here the expected pure premiums differ by class. So for example, Territory 1 with a larger percentage of Class A exposures than average, will just for that reason have an expected lower pure premium than it would otherwise have.

(b) Using the class factors, the adjusted exposures by territory are:

$$(150)(0.85) + (70)(1.15) + (110)(1) = 318.$$

$$(105)(0.85) + (115)(1.15) + (110)(1) = 331.5.$$

$$(70)(0.85) + (180)(1.15) + (125)(1) = 391.5.$$

The adjusted pure premiums by territory are:

$$3680/318 = 11.57, 8000/331.5 = 24.13, 11,636/391.5 = 29.72.$$

Indicated territory relativities with respect to territory 2:

$$11.57/24.13 = \mathbf{0.48}, 1, 29.72/24.13 = \mathbf{1.23}.$$

**p. 1326, solution 11.50:** Claims 6 contributes to this layer:  $100,000 - 25,000 = 75,000$ .

Final solution is okay.

**Page 1421**, comment to the exercise:

82% of expected unlimited losses are **in the layer below \$100,000**.