5. (2.75 points)

Given the following information:

- All policies are annual, and rate level is reviewed annually.
- Rate change takes effect on January 1, 2013.
- Unlimited annual loss frequency trend = -1%.
- Unlimited annual loss severity trend = +5%.
- Annual average written premium trend per exposure = 0%.
- Assume the exposures are inflation sensitive.
- Annual exposure trend = +1%.

Calendar/Accident Year	On-Level Earned Premium ($000s)	Reported Losses as of December 31, 2012 ($000s)	Reported Losses Excess of $1 Million as of December 31, 2012 ($000s)	Unlimited Loss Development Factor
2003	$60,612	$34,054	$456	1.00
2004	$61,941	$44,617	$4,888	1.00
2005	$66,893	$41,086	$5,348	1.00
2006	$67,092	$39,025	$8,774	1.00
2007	$65,960	$45,646	$8,134	1.00
2008	$65,037	$36,383	$0	1.00
2009	$65,242	$38,487	$1,398	1.00
2010	$67,732	$36,799	$0	1.03
2011	$69,450	$38,608	$2,002	1.08
2012	$67,213	$45,295	$9,000	1.20
Total	**$657,172**	**$400,000**	**$40,000**	**N/A**

a. (1.5 points)

For accident year 2012, determine the trended ultimate loss ratio to use in the January 1, 2013 rate level analysis incorporating a large loss adjustment for claims above $1 million.

b. (0.5 point)

Discuss the appropriateness of using a large loss adjustment in part a. above.

c. (0.75 point)

Assume the rate associated with the first $1 million of coverage is analyzed using only the data above. Briefly discuss three modifications to loss and premium elements that would produce a more accurate rate analysis.

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Exam 5 – Question #5

A. Large loss Adj Factor

= 40k/(400k – 40k) – 11.1%

Assumed LDF

Trend Period = 7/1/12 – 1/1/14 = 1.5 yrs

Large Loss Factor

$$\text{A + 12 Ult. LR} = \frac{(45{,}295 - 9000)(1.20)(099 \times 1.05)^{1.5}(1.111)}{(672)(1.01)^{1.5}}$$

$$= 0.752$$

B. Given that the amount of excess losses varied considerably from year to year, it makes sense to do a large loss adjustment to smooth the losses.

C. (1) Adj. prem to reflect only 1M of limits offered; adj. may vary by year.
(2) Adj. LDF to reflect lower development due to loss capping.
(3) Adj. severity trend to reflect lower trend due to loss capping.

4.

a. Most candidates correctly calculated the current rate level factors. Candidates did struggle with the premium trend, with common mistakes of missing the trend period or applying to written premium. Most candidates did well with the loss component, receiving full credit on the loss development and loss trend portion of the question. Candidates could get full credit for using either state specific development factors or countrywide as long as the selections were reasonable.

b. Candidates were often able to identify alternatives like extension of exposure or using more refined time periods, but some did lose points for lack of description.

c. Most candidates received partial credit. Candidates were often able to identify the impact on the indication given a premium change, but lacked the discussion leading up to the reason behind the premium change. Credit was also given for a complete discussion of the impact of changing trend periods due to different average earned and average accident dates.

5.

Many candidates skipped this question or received little partial credit with very few receiving full credit.

a. Candidates most often determined the appropriate trend period of 1.5 years. Candidates received credit for knowing the components of the loss ratio trend. Candidates did receive credit whether they treated the loss development factors given in the problem as either cumulative or incremental factors. Candidates struggled with the large loss factor. Many did not calculate it correctly and others did not apply it correctly. An example of incorrect application was not subtracting excess losses from reported losses in 2012 before applying the excess loss factor.

b. Candidates needed to identify the volatility in the data and the benefit of stability in the indications. Multiple responses were acceptable for each piece, but candidates often were able to elaborate on only one component.

c. Candidates often were able to identify 3 different enhancements, receiving full credit.

6.

Candidates did very well on this question. Most candidates successfully applied the Berquist-Sherman case outstanding adjustment technique and set up the steps for calculating the projected ultimate loss and LAE pure premium of the rate level indication. When candidates did lose points it was usually for: not trending the losses and LAE to the effective period, using an incorrect trend period, or not applying the ULAE provision.