5. (2.25 points)

An insurance company purchases per risk excess-of-loss reinsurance each year that covers individual claims that exceed the retention.

Given the following information as of December 31, 2015:

Accident Year	Earned Exposures	Direct Ultimate Losses ($000)	Claim Counts
2013	1,850	185,000	185
2014	1,750	190,000	175
2015	1,650	199,500	165

Ultimate Value of Direct Claims Excess of $500,000		
Accident Year	Claim	Direct Ultimate Loss of Individual Claims ($000)
2013	A	18,400
2013	B	3,200
2014	C	5,700
2014	D	5,200
2015	E	9,500
2015	F	6,200

Accident Year	Retention ($000)
2013	2,000
2014	5,000
2015	10,000

- Policies are annual.
- Policies are written uniformly throughout the year.
- Rates are expected to be in effect for one year.
- Planned rate revision to be effective January 1, 2017.

Calculate the average trended pure premium net of reinsurance at the current $10,000,000 retention.

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QUESTION 5

TOTAL POINT VALUE: 2.25 | **LEARNING OBJECTIVE: A3**

SAMPLE ANSWER

Calculate or identify that there was no trend (or 0% trend) in frequency rate. Calculate the average direct loss severity for each year (total direct losses divided by claim count), calculate the severity trend, and select a trend rate:

AY	Frequency	Sev	Trend
2013	0.100	$100.00	
2014	0.100	$108.57	8.6%
2015	0.100	$120.91	11.4%

Selected Trend Rate: 10.0%

Identify the trend period: 7/1/xx – 1/1/2018

Apply the severity trend to the large losses, and calculate the losses excess of the current reinsurance:

AY	Loss		Trend Factor		Trended Ultimate	XS of current Reinsur
2013	18,400	x	1.1^4.5	=	28,254	18,254
2013	3,200	x	1.1^4.5	=	4,914	0
2014	5,700	x	1.1^3.5	=	7,957	0
2014	5,200	x	1.1^3.5	=	7,259	0
2015	9,500	x	1.1^2.5	=	12,056	2,056
2015	6,200	x	1.1^2.5	=	7,868	0

Apply the severity trend to the direct losses, and calculate the net losses by removing the trended excess of current reinsurance. And finally, divide by exposures to calculate the historical net pure premium and select a pure premium estimate.

AY	Direct Loss		Trend Factor		Trended Direct		XS of Curr Reins		Trended Net Loss		Exposure		Pure Premium
2013	185,000	x	1.1^4.5	=	284,079	-	18,254	=	265,824	/	1,850	=	143.69
2014	190,000	x	1.1^3.5	=	265,233	-	0	=	265,233	/	1,750	=	151.56
2015	199,500	x	1.1^2.5	=	253,177	-	2,056	=	251,121	/	1,650	=	152.19
									782,179		5,250		148.99

Selected Pure Premium: 148.99

EXAMINER'S REPORT

Candidates were expected to demonstrate their ability to calculate and select trend rates, and identify the trending period. Candidates were also expected to demonstrate their understanding of how to apply trend rates to large losses to calculate excess losses and how to use the correct method to calculate trended net losses. Finally, candidates were expected to calculate a pure premium to provide the answer requested in the question.

Common mistakes included:

- Removing the amount excess of current reinsurance (untrended) from the direct loss prior to calculating the average severity and then applying the selected trend to the "net" direct losses. This fails to recognize that losses close to but under the current reinsurance level may, after trend, result in excess losses
- Using the gross average severity to calculate the trend rate, but netting out the excess prior to applying that trend
- Aggregating the large losses and applying the $10M retention to the aggregate accident year losses rather than separately applying this limit to each of the large losses