

EXAM 6 – CANADA, FALL 2016

18. (3 points)

The following information is available as of December 31, 2015 for a property and casualty insurance company. All amounts are in thousands of dollars (\$000s).

	2014	2015
Direct Written Premiums	200,000	300,000
Assumed Written Premiums	0	0
Ceded Written Premiums – Not Intra Pool	6,500	10,000
Total capital (margin) required excluding operational risk and diversification credit	125,000	175,000

You are also given the following information:

Risk factor for Direct premiums written in the past 12 months	2.50%
Risk factor for Reinsurance assumed in the past 12 months - Not Intra Pool	1.75%
Risk factor for Reinsurance assumed in the past 12 months - Intra Pool	0.75%
Risk factor for Reinsurance ceded in the past 12 months - Not Intra Pool	2.50%
Risk factor for Reinsurance ceded in the past 12 months – Intra Pool	0.75%
Risk factor for Premium growth above 20% threshold	2.50%
Risk factor for Capital/margin required component	8.50%

a. (0.5 point)

Define operational risk.

b. (2 points)

Calculate the operational risk margin.

c. (0.5 point)

Explain the purpose of the diversification credit.

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EXAM 6C FALL 2016 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 18	
TOTAL POINT VALUE: 3	LEARNING OBJECTIVE(S): C2
SAMPLE ANSWERS	
Part a: 0.5 point	
<ul style="list-style-type: none"> Operational risk is the risk of the day-to-day operations of an insurance company Risk of loss due to internal failure of system, process or person or external person. It does include legal risks but not reputational risks or strategic risks. 	
Part b: 2 points	
<p>Capital for gross written premiums = $2.5\% \times 300,000 = 7,500$ Capital for assumed written premiums = 0 Capital for ceded written premiums = $2.5\% \times 10,000 = 250$ Growth in excess of 20% = $(300,000 - 1.20 \times 200,000) \times 2.5\% = 60,000 \times 2.5\% = 1,500$ Margin of 8.5% = $8.5\% \times 175,000 = 14,875$ Total before considering the cap = $7,500 + 250 + 1,500 + 14,875 = 24,125$</p> <p>Cap = $30\% \times 175,000 = 52,500$</p> <p>Final operational risk margin = $\min(52,500 ; 24,125) = 24,125$</p>	
Part c: 0.5 point	
The purpose is to recognize the fact that risks are not perfectly correlated. A company would not expect the x% percentile for each risk to adversely affect the company simultaneously.	
EXAMINER'S REPORT	
Candidates are expected to demonstrate understanding of how operational risk and diversification are reflected in an insurer's capital requirements.	
Part a	
<p>Candidates were expected to articulate what is operational risk with little.</p> <p>Failure to execute business plan wasn't given any credit since it was too vague and could apply to any situation. No credit also for mentioning premium risk or liabilities risk or just trying to conjure an answer out of keywords.</p> <p>Candidates who provided examples instead defining operational risk were given credit.</p> <p>A common mistake was linked to overly brief answers.</p>	
Part b	
<p>Candidates were expected to consider all components of the operational risk calculations, including determining whether a cap applies.</p> <p>Candidates did not lose credit if they did not mention the assumed component.</p>	

EXAM 6C FALL 2016 SAMPLE ANSWERS AND EXAMINER'S REPORT

Common mistakes included:

- Forgetting to show that they applied the cap even if it was not applicable in this case
- Using different inputs than those provided in the question
- Incorrectly calculating growth over 20%

Part c

Candidates were expected to demonstrate understanding of diversification being linked to the notion of not experiencing two large losses at the same time or not having entirely correlated losses.

In the MCT context, the diversification credit is not related to underwriting/operating practices. For this reason, the following did not receive credit:

- To encourage insurers to avoid risk concentration by region & line of business
- This measures how one company is prone to risk in one specific segment
- This encourages the insurer to diversify investments

Another common mistake was due to lack of detail.