RMS® CCRA® Training Program
Financial Modeling Exercise 2

ANSWER KEY

You have been asked to analyze a portfolio that consists of six accounts. Each account has multiple locations and a single policy. After running the RiskLink® DLM model on the portfolio and applying the primary insurance structures, the resulting gross losses for each account are:

Account	Line of Business	Gross Loss
A	Commercial	$2,950,000
B	Commercial	$5,500,000
C	Industrial	$1,750,000
D	Commercial	$5,000,000
E	Industrial	$2,500,000
F	Commercial	$10,500,000

You have the following reinsurance apply to your portfolio:

Type	Per-Risk Limit	Occurrence Limit	Attachment Point	Participation	Lines of Business	Inuring Priority	Exposure Level
Working Excess	$1,000,000	$8,000,000	$1,500,000	75%	Commercial	2	Account
Quota Share	$3,000,000	$10,000,000	$750,000	50%	Industrial & Commercial	1	Account
Catastrophe	NA	$10,000,000	$2,000,000	100%	All	1	Portfolio

Using the expected mode methodology, calculate the portfolio level losses for the following perspectives:

- Working Excess Treaty
- Quota Share Treaty
- Net Pre Cat financial perspective
- Catastrophe Treaty
- Net Post Cat financial perspective

Use the worksheet called Financial Model Exercise 2_template.xls. Save your answers there.

Answer: *The first thing to do is to identify the order in which the treaties will take loss:*

1. *Quota Share Treaty (Inuring Priority 1, Account Level)*
2. *Working Excess Treaty (Inuring Priority 2, Account Level)*
3. *Catastrophe Treaty (Inuring Priority 1, Portfolio Level)*

Starting with the Quota Share, calculate the losses the treaty takes in each applicable account. The answers are in the fourth column of the table on the following page. After that we need to calculate what is left after the application of the Quota Share treaty (fifth column); this is the exposure over which the WX treaty will apply. We then calculate the losses of the WX treaty for each account (sixth column). The next step is to calculate the treaty losses at the portfolio level, applying the occurrence limits (the answers are shown in red in the last row of the table).

Account	Gross Loss	LOB	QS Treaty	Net of QS	WX Treaty
A	$2,950,000	Commercial	$1,100,000	$1,850,000	$262,500
B	$5,500,000	Commercial	$1,500,000	$4,000,000	$750,000
C	$1,750,000	Industrial	$500,000	$1,250,000	$0
D	$5,000,000	Commercial	$1,500,000	$3,500,000	$750,000
E	$2,500,000	Industrial	$875,000	$1,625,000	$0
F	$10,500,000	Commercial	$1,500,000	$9,000,000	$750,000
Total Pre Occurrence Limit			$6,975,000		$2,512,500
Total Post Occurrence Limit	**$28,200,000**		**$5,000,000**		**$2,512,500**

The Portfolio Level Net Pre Cat losses are calculated as the Portfolio Level Gross Loss ($28,200,000) minus the sum of the Portfolio Level Treaty losses ($5,000,000 + $2,512,500); that equals $20,687,500.

Finally, the application of the Cat treaty over the Portfolio Level Net Pre Cat Loss results in a Cat Treaty Loss of $10,000,000 and a Post Cat Net Loss of $10,687,500.