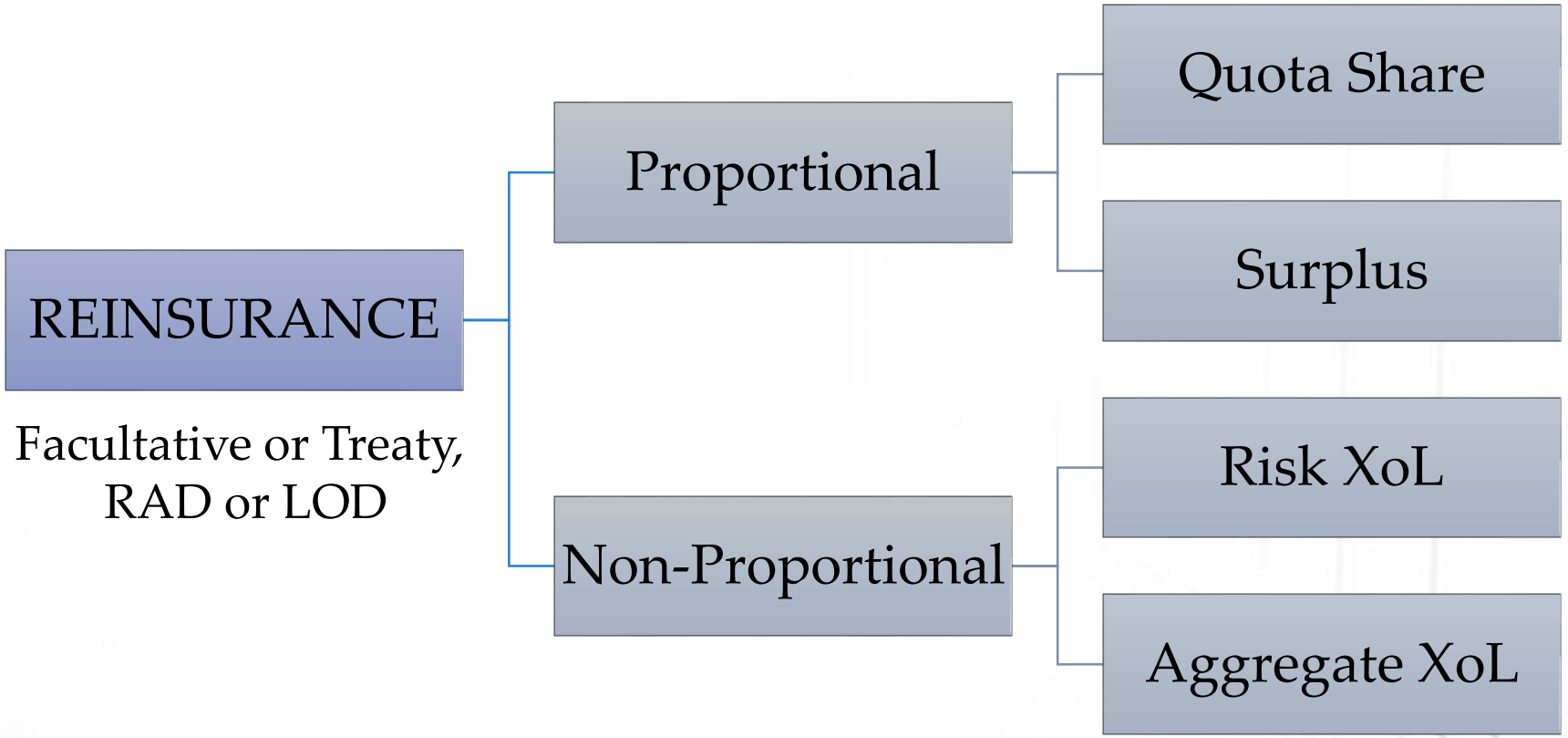
Singapore Actuarial Society – 7th General Insurance Conference

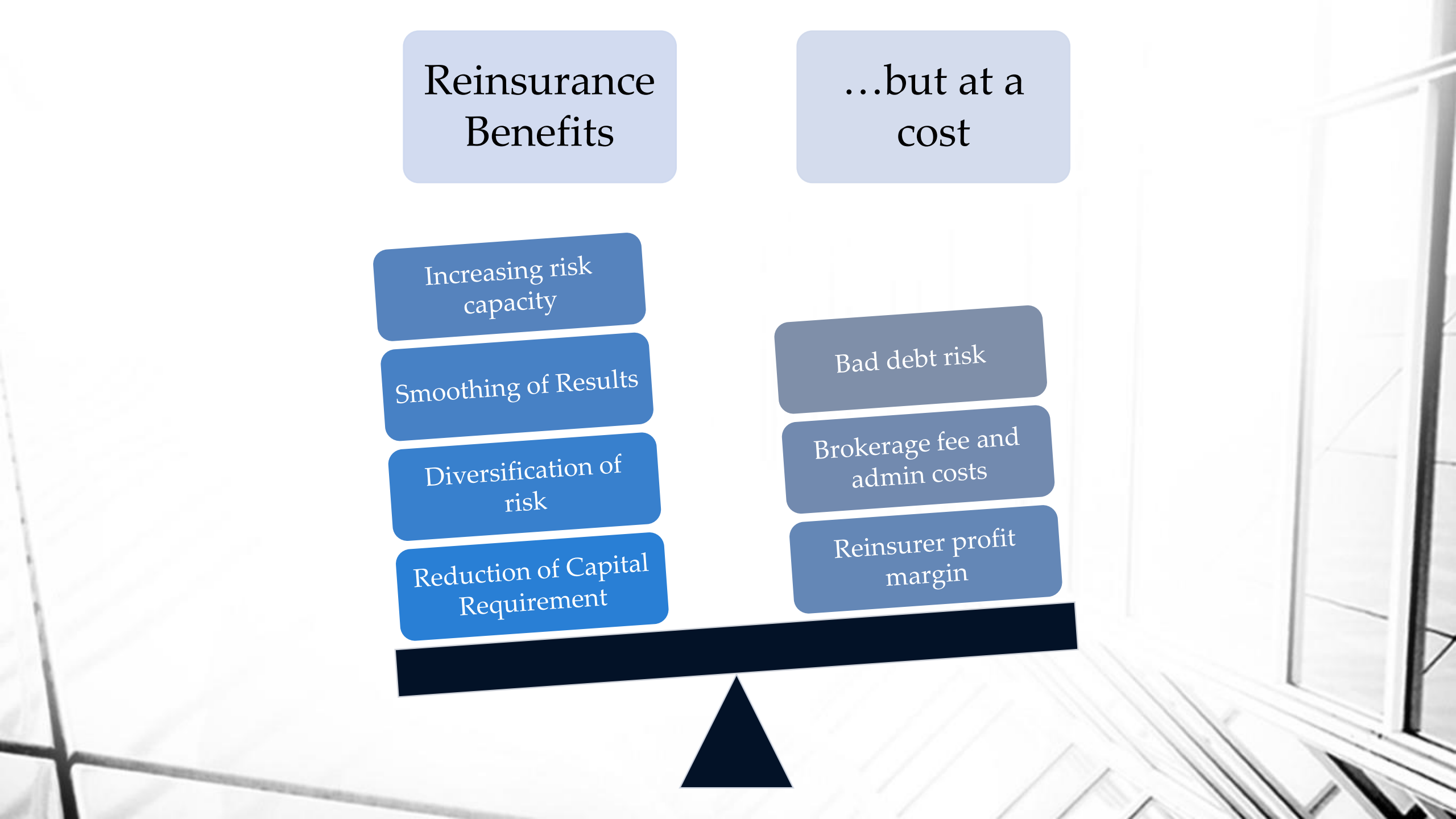
Maximizing Reinsurance Potential

Sharad Bajla

29th May 2015

Types of Reinsurance




Reinsurance Benefits
…but at a cost
Increasing risk capacity
Smoothing of Results
Diversification of risk
Reduction of Capital Requirement
Bad debt risk
Brokerage fee and admin costs
Reinsurer profit margin

Steps – Maximizing RI Potential

1. Identify goals you aim to achieve with the exercise.
2. Model current gross and net losses.
3. Apply alternate reinsurance structures.
4. Develop a full capital model to record other factors like asset risk, credit risk, exchange rate risk, operational risk, etc. (optional)

Step 1: Identify Goals

Possible goals from this exercise:

- Limit the maximum net loss to $x million in a 1 in 100 years scenario;
- Generate a profit of $x million on an expected basis
- Improve Return on Capital Employed
- Understand the suitability of an additional XoL layer covering multiple regions
- Analyze the impact of quota share on a region's business
- Effect of change in reinstatements

Step 2: Modelling

- Generate gross losses
  - Split into attritional, large or catastrophes.
  - ELT helps to model catastrophe losses
- Apply current RI to gross losses with as many features as possible – profit commission, limited reinstatements, exclusions.
- Set up outputs to summarize key statistics – maximum net loss, net loss ratio, return on capital, etc.
- **Validate**

Step 3: Apply alternate RI

- Theoretically, the model can be run millions of times with multiple combinations of reinsurance contracts.
- However, most practical scenarios allow the modeller to only test a few alternate contracts or features.
- Our recommendations should be based on model outputs combining the effect of multiple statistics.

Worked Example

Items	Gross	Base Scenario	Scenario 1	Scenario 2	Scenario 3
Expected Profit	**10 m**	**7 m**	**8 m**	**5 m**	**7 m**
Return on GWP	10%	7%	8%	5%	7%
Return on 99%	22%	22%	23%	23%	22%
Return on 99.5%	**18%**	**19%**	**20%**	**20%**	**22%**
VaR at 75%	-1 m	-2 m	-2 m	-2 m	-4 m
VaR at 90%	-15 m	-12 m	-14 m	-9 m	-15 m
VaR at 99%	-46 m	-32 m	-34 m	-23 m	-30 m
VaR at 99.5%	**-56 m**	**-37 m**	**-39 m**	**-27 m**	**-30 m**

Difficulties in implementation

- Modelling gross losses can be difficult.
- Explaining the methodology to non-technical audiences can be challenging.
- There is no single statistic that allows the modeller to choose the ‘best reinsurance structure’
- Softer factors are not substantiated – e.g. non being able to place 100% of the contract, company relationship with a broker, etc.

Conclusions

- With a well planned structure, Reinsurance is one of the most effective risk management tools.
- The right combination of reinsurance contracts can align a company to its long term strategies.
- Tweaking the reinsurance can increase profits, increase stability, decrease capital or a combination of the above.

KEY QUESTIONS

- How much time and effort do companies invest in a thorough analysis of the reinsurance structure?
- How much involvement are Actuaries making in these key decisions?

Thank You

Sharad Bajla
Asia Capital Reinsurance Group
Tel: +65 9432 5831
Email: sharadbajla@gmail.com