



# ISFA - Reinsurance

Anne Pellerin

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# Outline: Reinsurance

## **Goal: Reinsurance in general**

- Impacts of Reinsurance
- Basics of Reinsurance

# Basics of reinsurance

**Reinsurance is...**

**“The insurance of the insurers”**



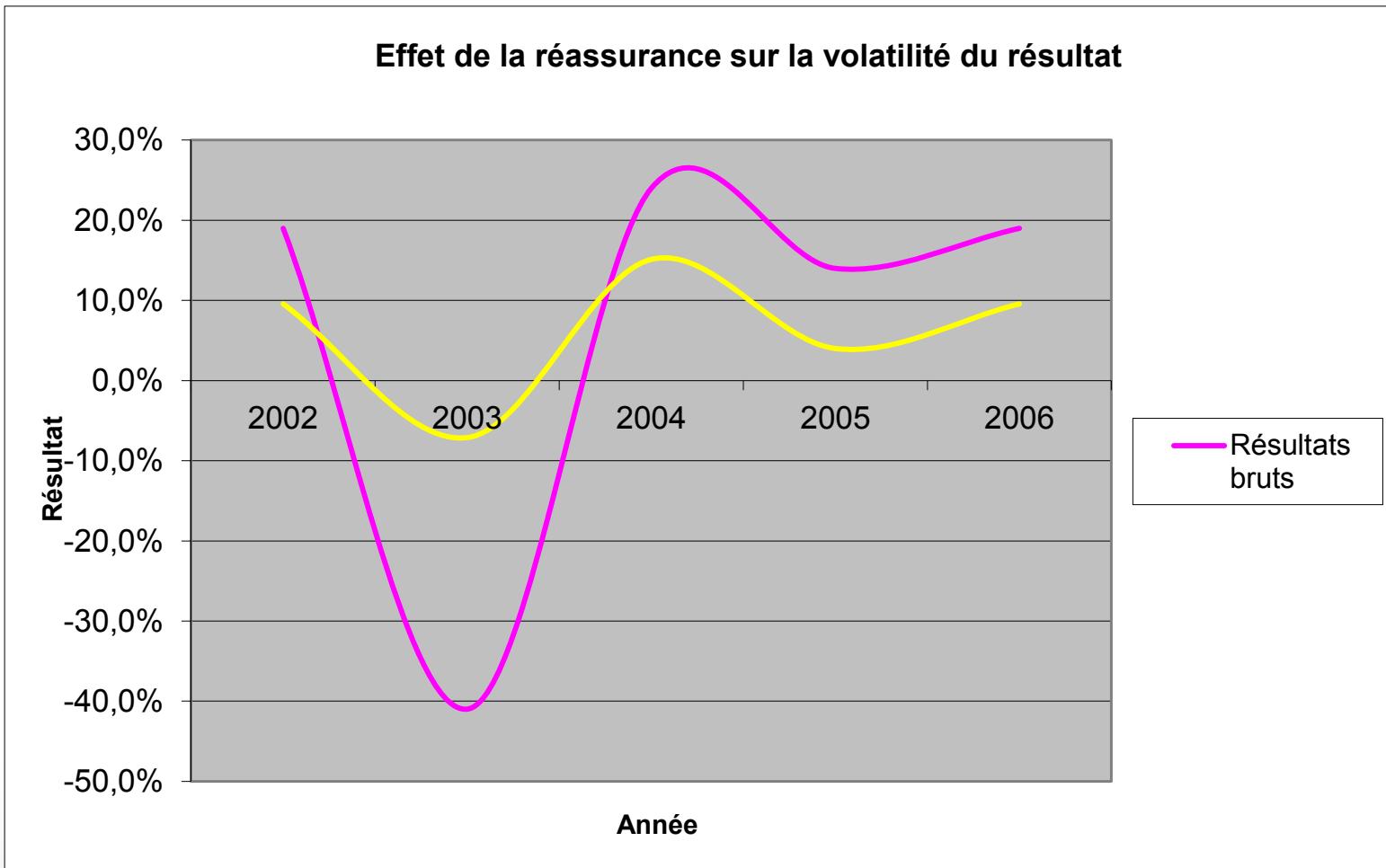
# Why buying reinsurance?

- Financial protection against:
  - Catastrophic claims (accumulation)
  - Individual large claims
  - Abnormal frequency of « normal claims »



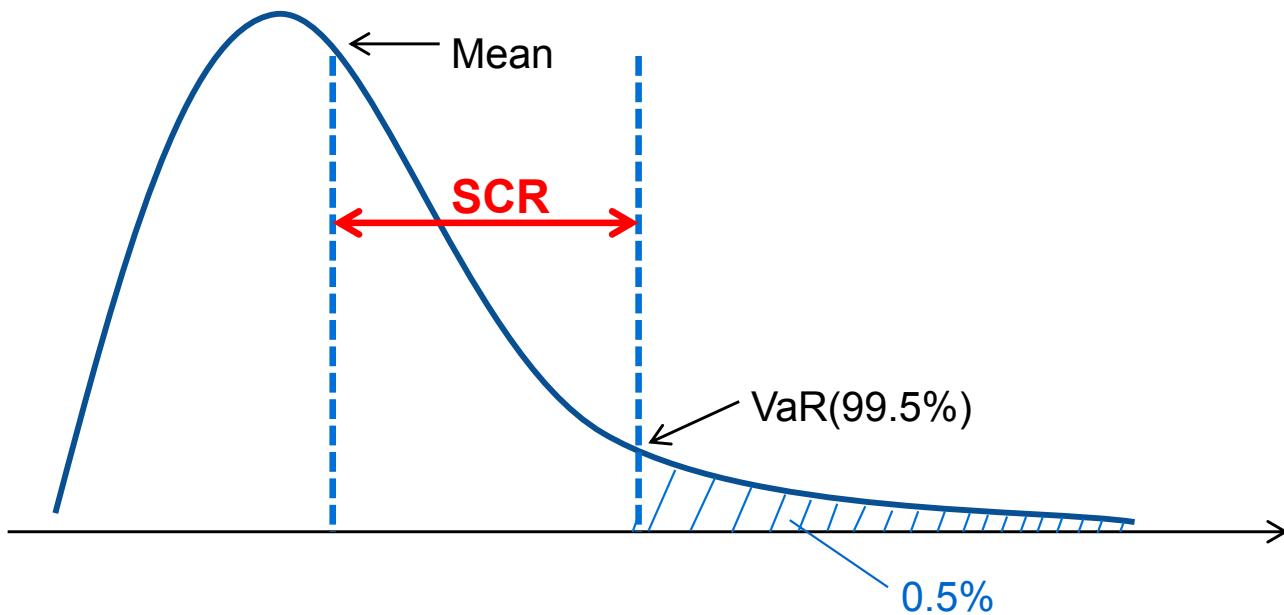
# Why buying reinsurance?

- Reducing the volatility of the result



# Why buying reinsurance?

- Solvency II: Reducing the SCR in exchange for reduction of mean



# Why buying reinsurance?

- Technical support



# Why buying reinsurance?

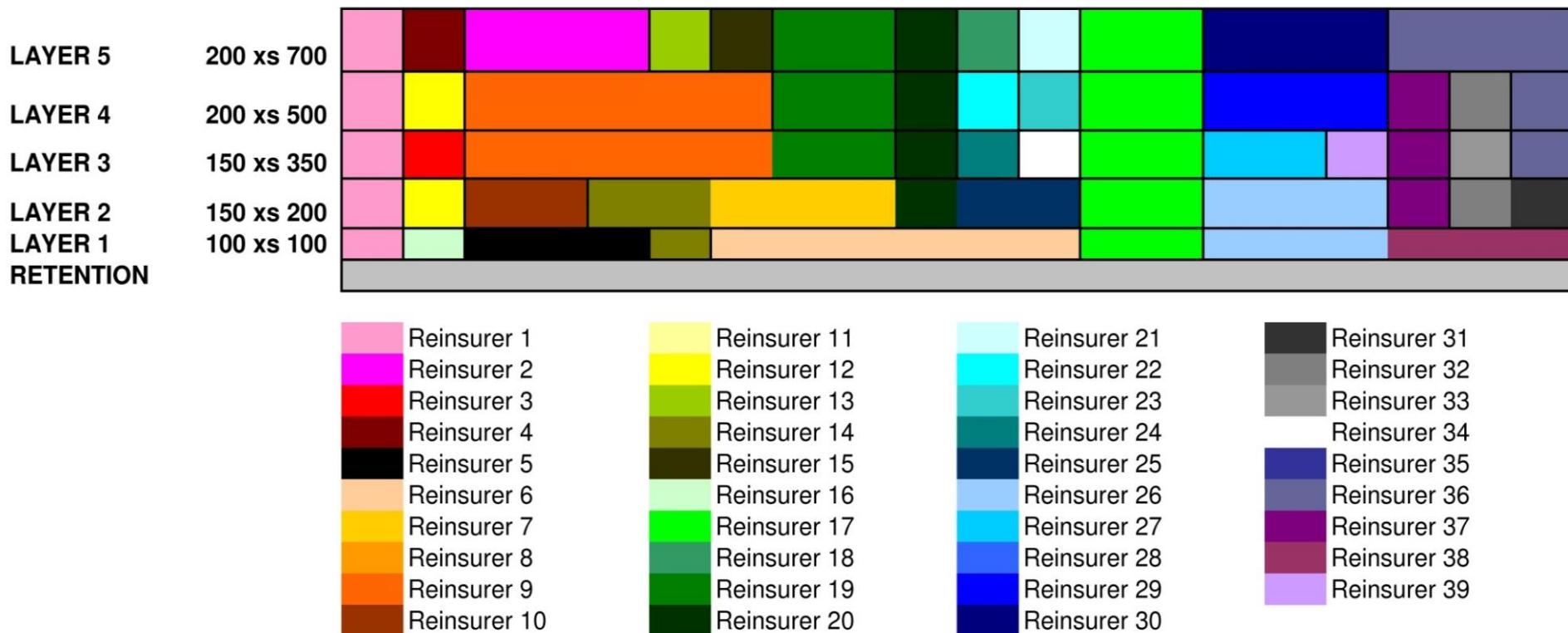
- Financing new business



# Why buying reinsurance?

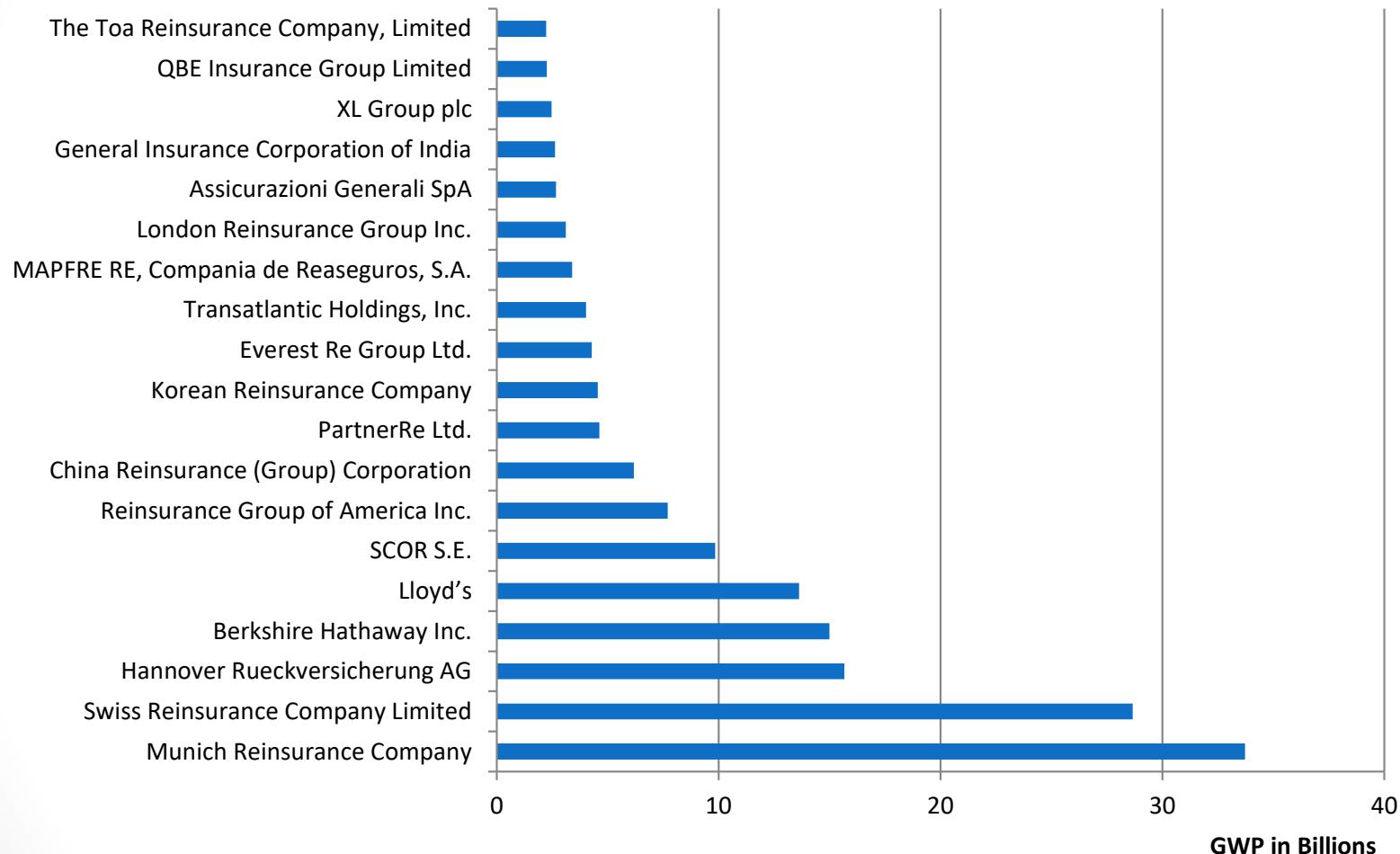
- Spreading of risks

**XL PER EVENT**





# Who are reinsurers?



Source: S&P

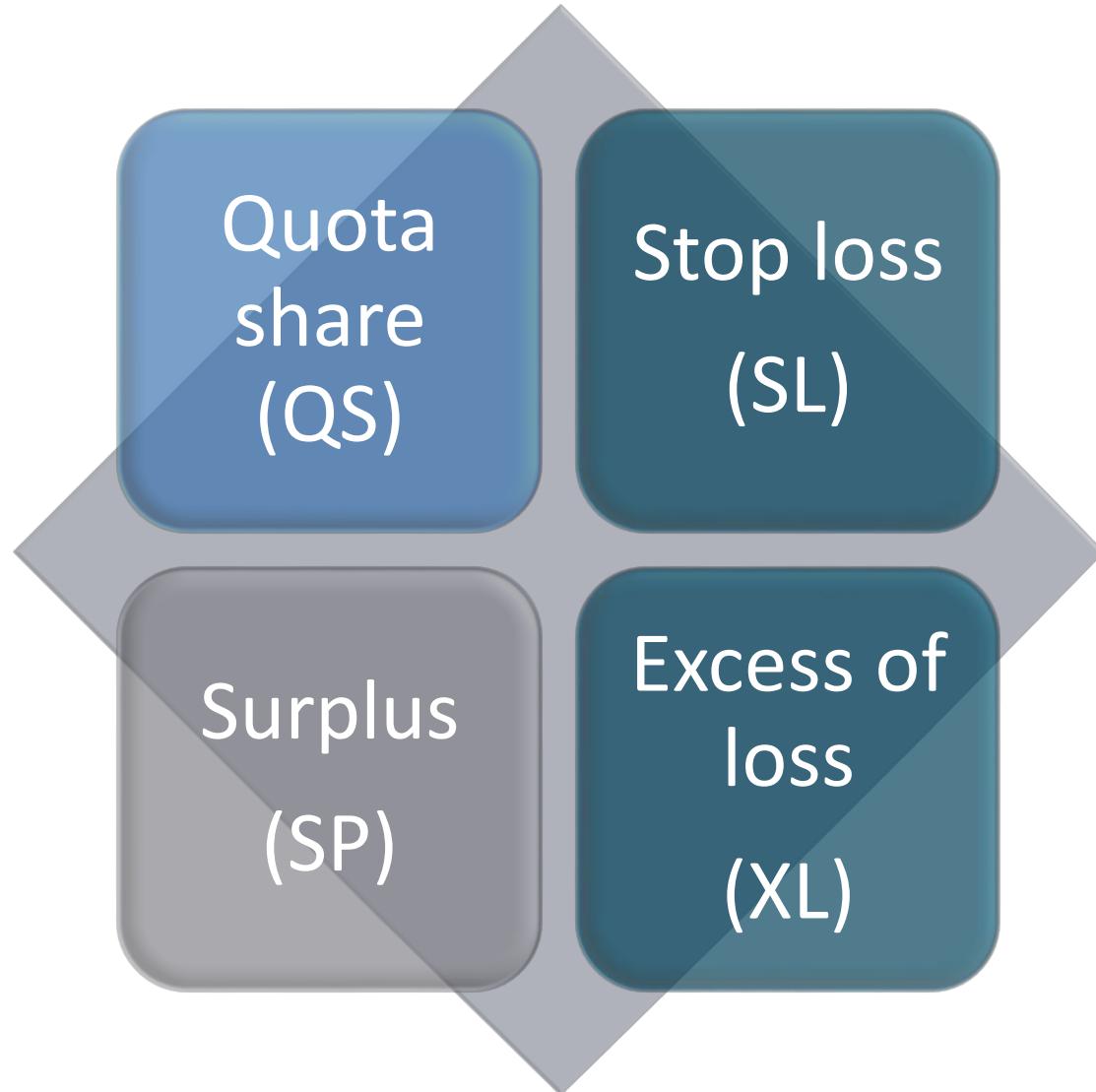


# Outline: Reinsurance

## **Goal: Reinsurance in general**

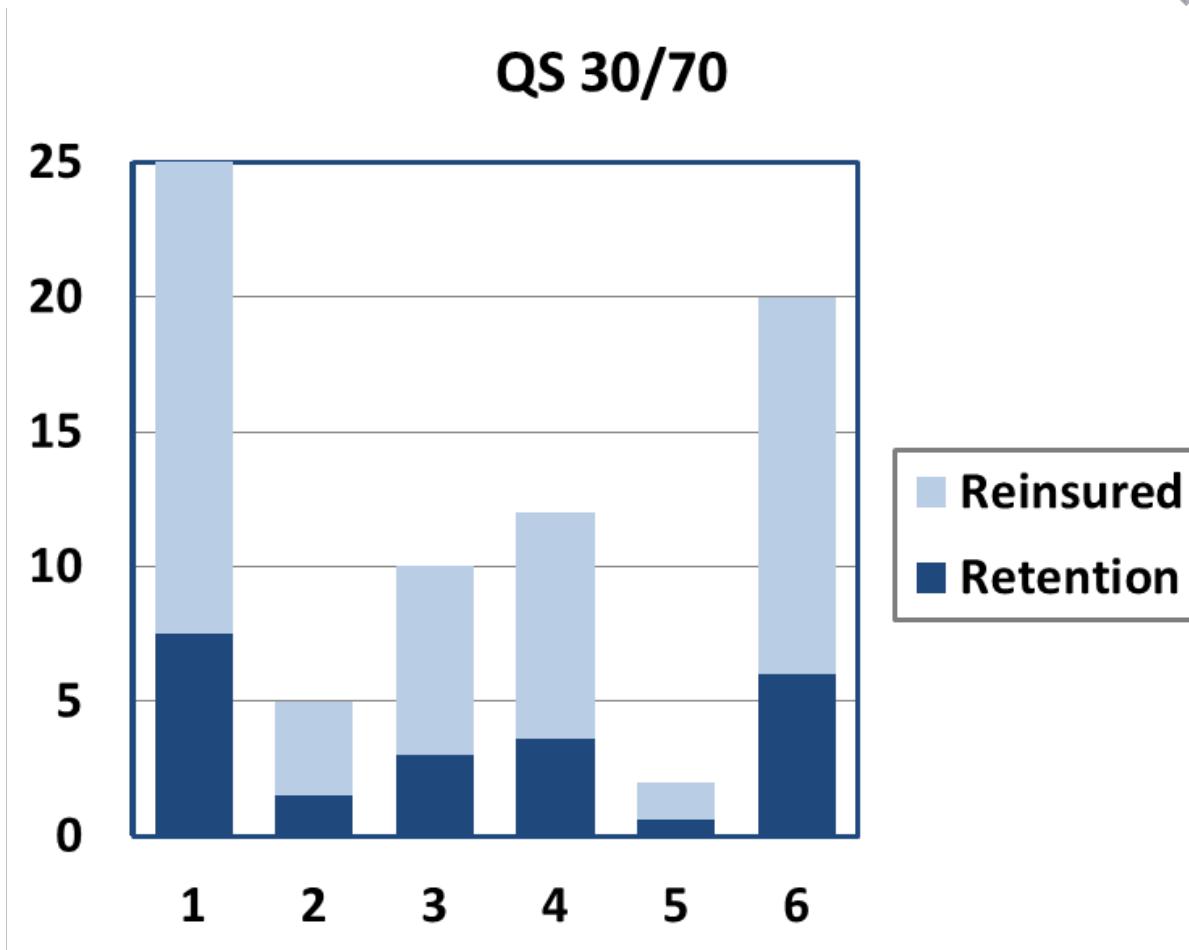
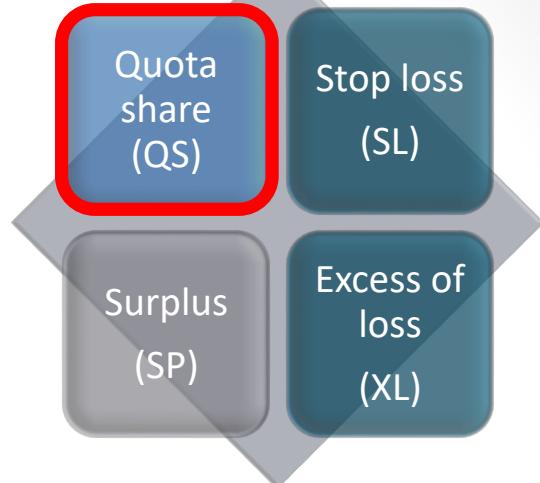
- Impacts of Reinsurance
- Basics of Reinsurance

# Traditional reinsurance



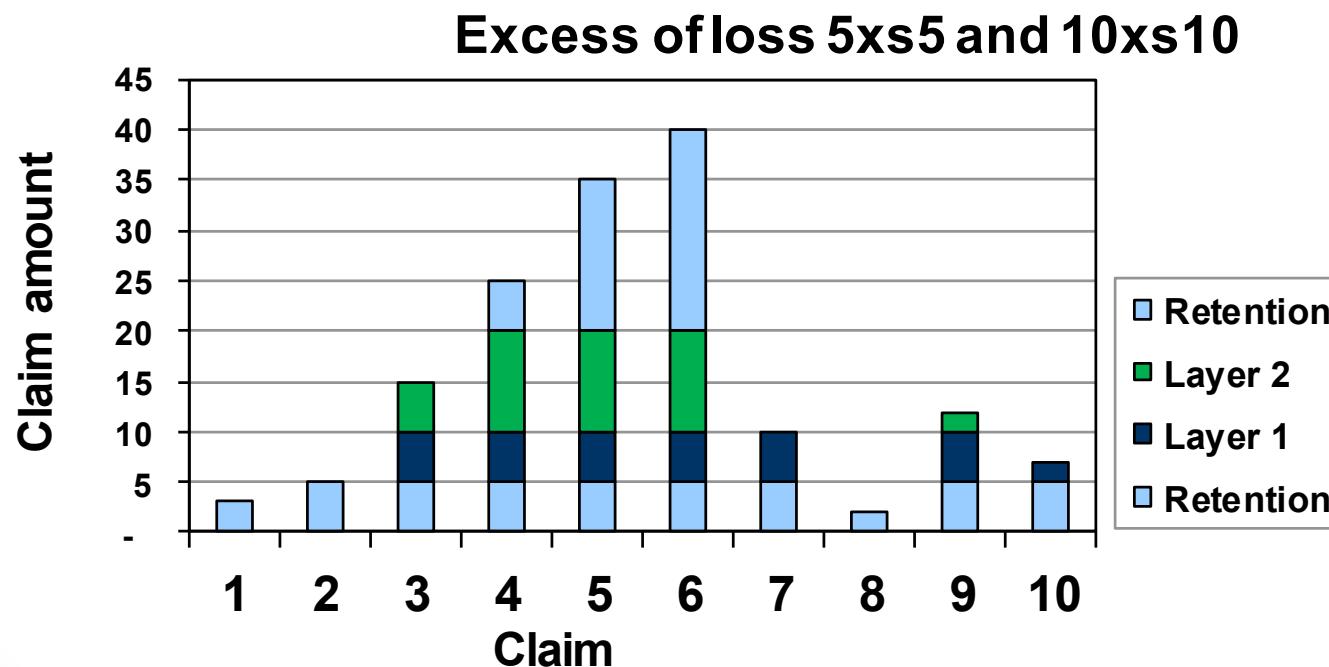
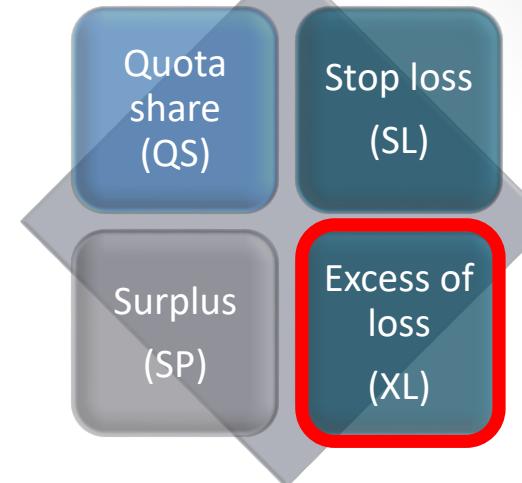
# Quota Share

- Cession rate  $\alpha_i = \alpha$  for all risks i



# Excess of loss

- Notation C xs D
- X original claim amount
- $X^{\text{Re}} = \min(C, \max(0, X - D))$
- $X^{\text{Ced}} = X - X^{\text{Re}} = \min(X, D) + \max(0, X - (C + D))$





# Why an Excess of loss per risk?

- Limitation of the maximum exposition by risk/ underwriting limit increase
- Ideal when the cedant portfolio is homogeneous

....

- No cover for exceptionally high events
- No cover for deviation in frequency

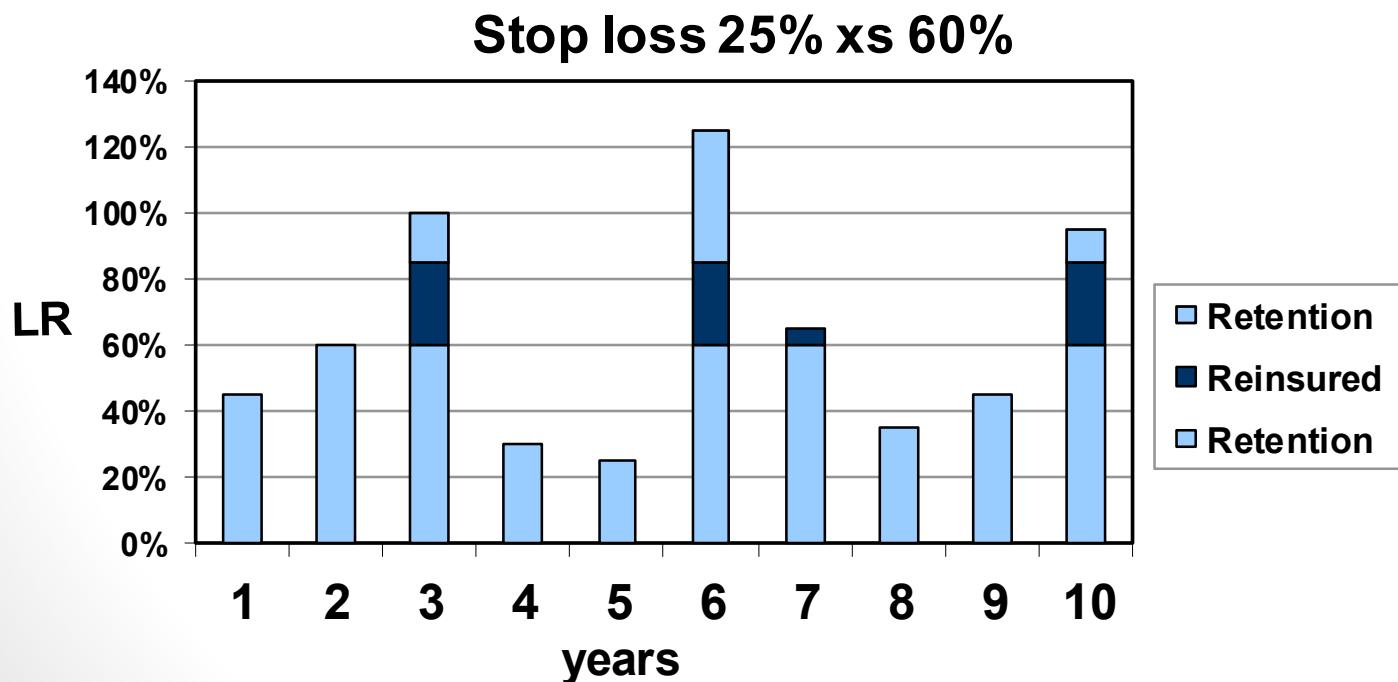
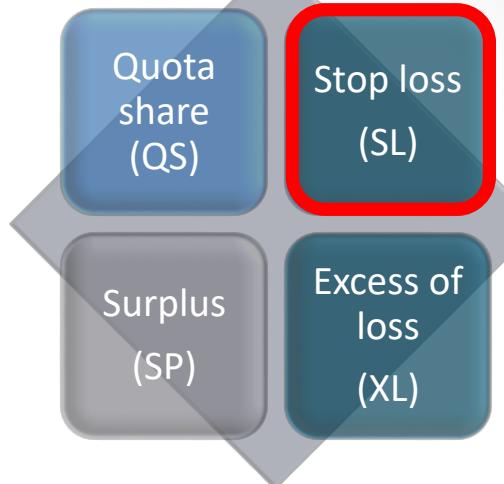


# And per event Excess of Loss ?

- Limit the maximum exposition by event
- Easy management
- ...
- Fixing the reinsurance premium
- Reinsurer results are VERY unstable, mondial market implies a very volatile price
- The maximal probable loss is not easy to estimate
- Event definition not easy

# Stop loss

- Notation:  $C \times D$
- $S = X_1 + \dots + X_N$
- $S^{\text{Re}} = \min(C, \max(0, S - D))$
- $S^{\text{Ced}} = S - S^{\text{Re}}$





# Why a stop loss?

- Cover for a deviation of claims frequency (in retention)
- Cover for multi-lines sinistrality
- Obvious impact in terms of Solvency Capital

...

- The market is SL averse
- « Ethical » issues
- Pricing ?



# Actual reinsurance structures

- Different reinsurance types can be combined
- This combination depends on covered the line of business
- Specific clauses can be added (Reinstatements, AAD, ...)
- *Example* : Common property reinsurance structure
  1. Surplus (makes the portfolio homogeneous)
  2. XL per risk on retention
  3. XL per event (on retention)

# Questions ?

