Reinsurance Myths

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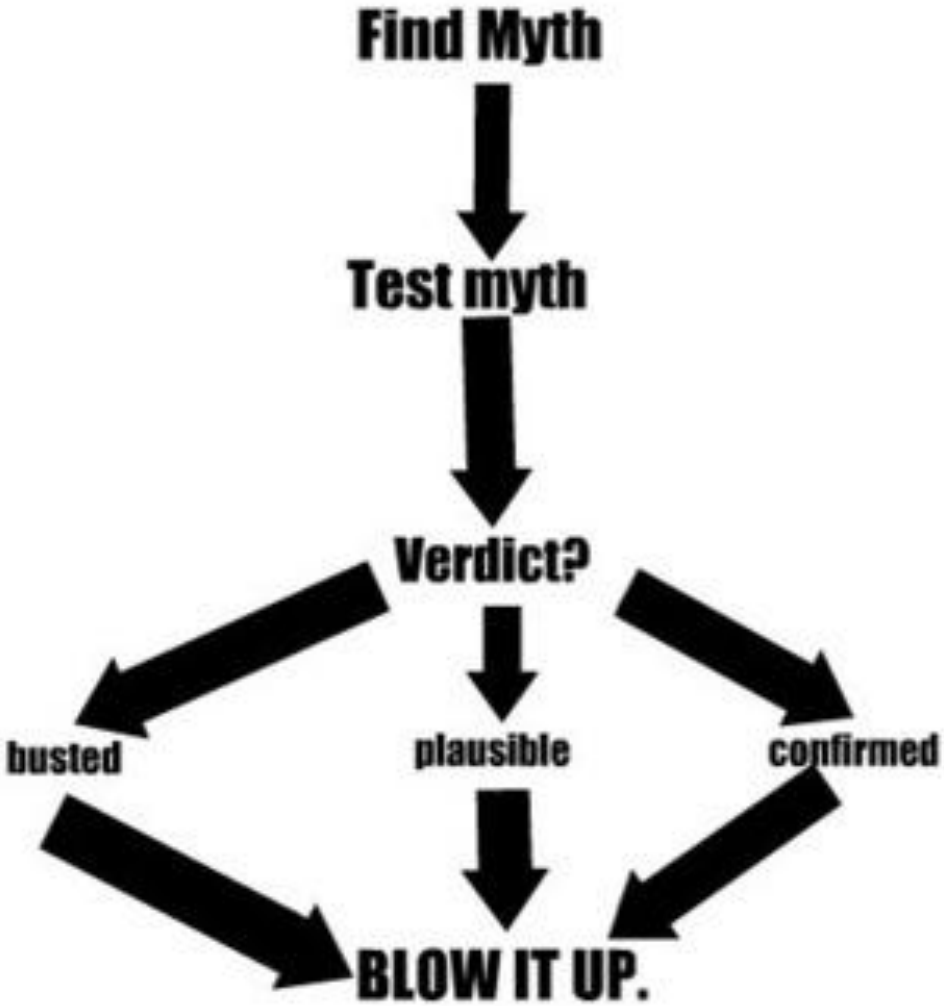
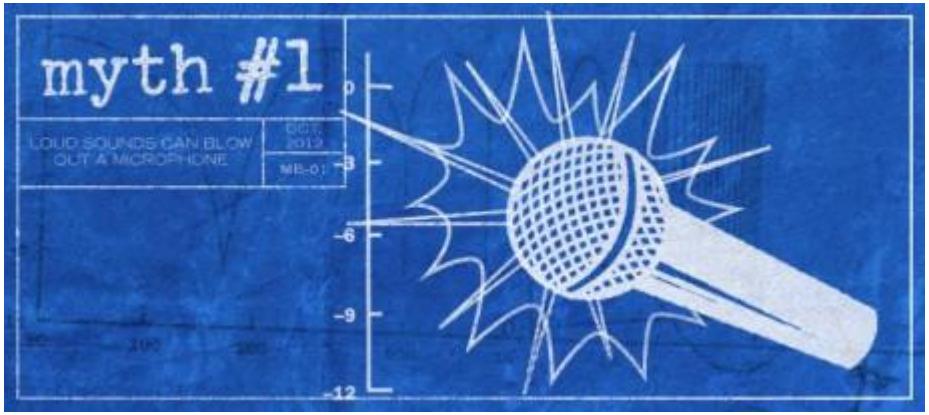
Myth Busters: Reinsurance Special

- Commission vs. Expenses
- Treaty balance
- Sliding scale commission
- Mean variance

The Mythbuster Method

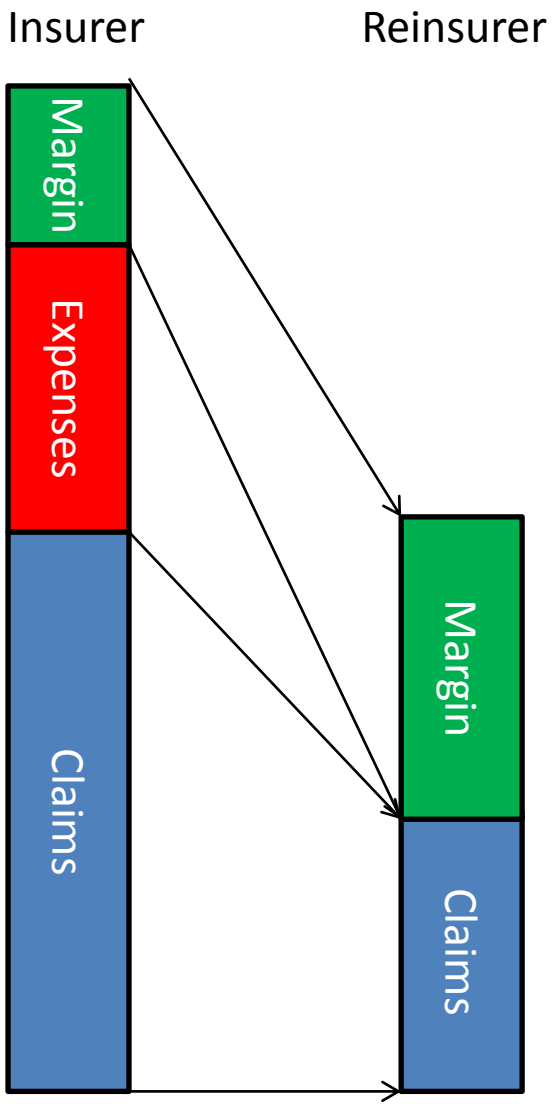




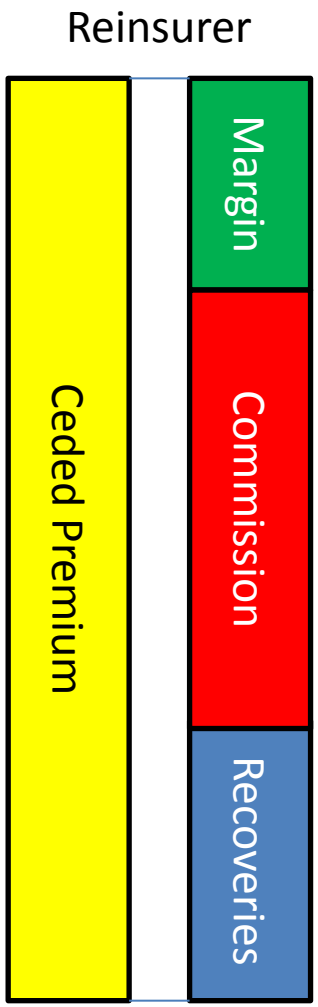
- **Myth 1:** “Reinsurance commission should cover an insurer’s expenses”

Origin of the Myth

- Proportional Reinsurance
- The reinsurer gets a % of the premium
- But the reinsurer does not have a % of the expenses
- Therefore the reinsurer pays a commission to the direct insurer that aims to cover a % the insurer's expenses



Evidence Against



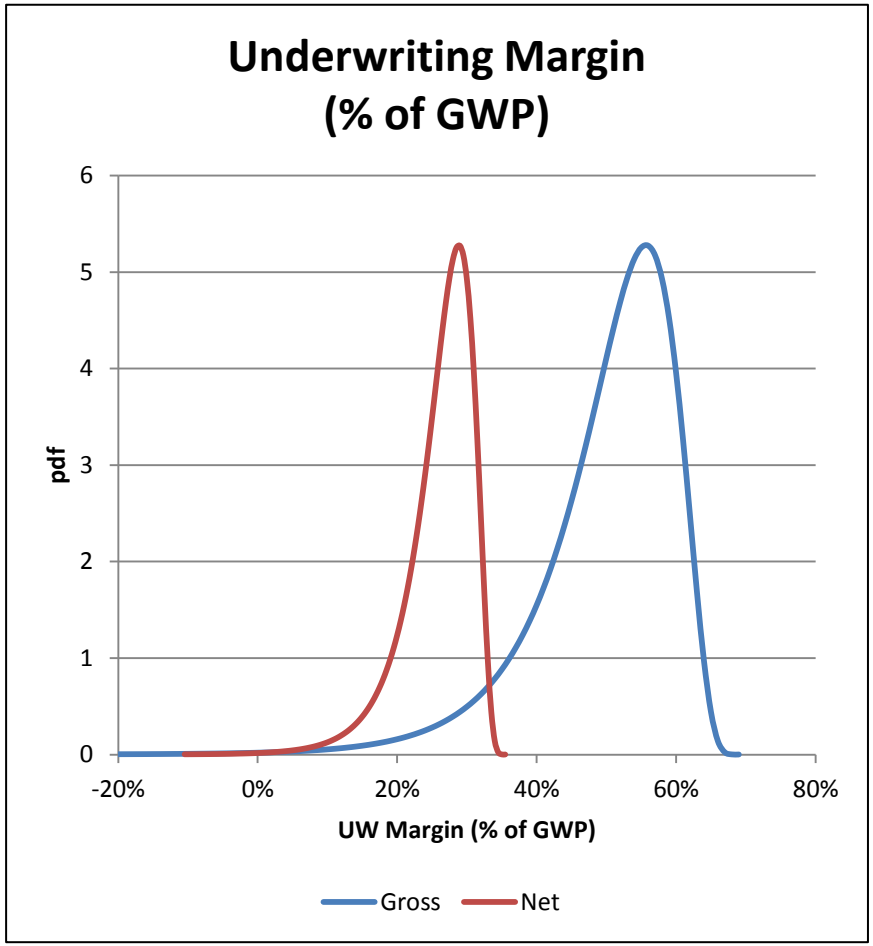
- Reinsurers price to a target margin
- Insurers' expenses don't effect that margin

Margin = Ceded Premium less Recoveries less Commission

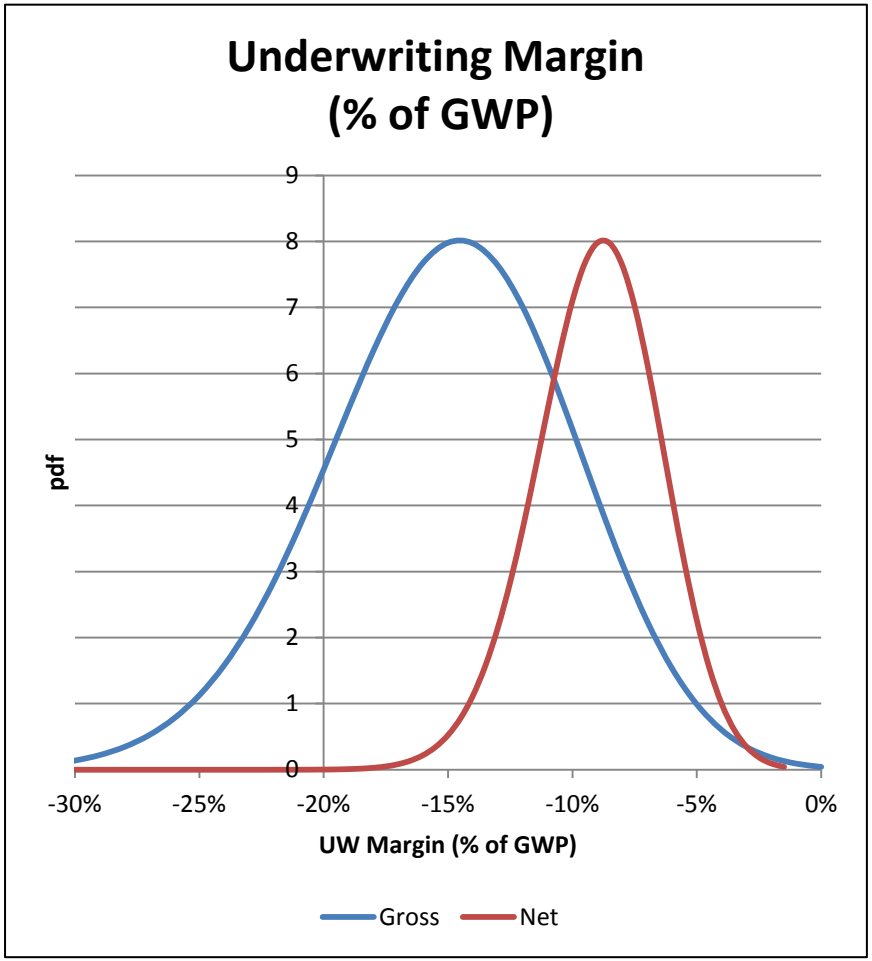
Evidence Against

- The insurer can be much **worse off**, even if the reinsurance commission covers the expenses

- Consider a portfolio
  - Loss ratio is lognormal with 20% mean and 10% standard deviation
  - Expenses 30% of GWP
  - 50% quota share reinsurance
  - 32% reinsurance commission



Evidence Against



- The insurer can be **better off**, even if the reinsurance commission doesn't cover the expenses
- Consider a portfolio
  - Loss ratio is lognormal with 80% mean and 5% standard deviation
  - Expenses 35% of GWP
  - 50% quota share reinsurance
  - 32% reinsurance commission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- **Myth 2:** “Treaty balance is important, especially for reinsurers’ risk management”

Origin of the Myth

- A reinsurer can become insolvent from a large claim
- A reinsurance underwriter can lose their profit bonus because of a large claim
- It can take many years of ceded premium to pay for a large claim

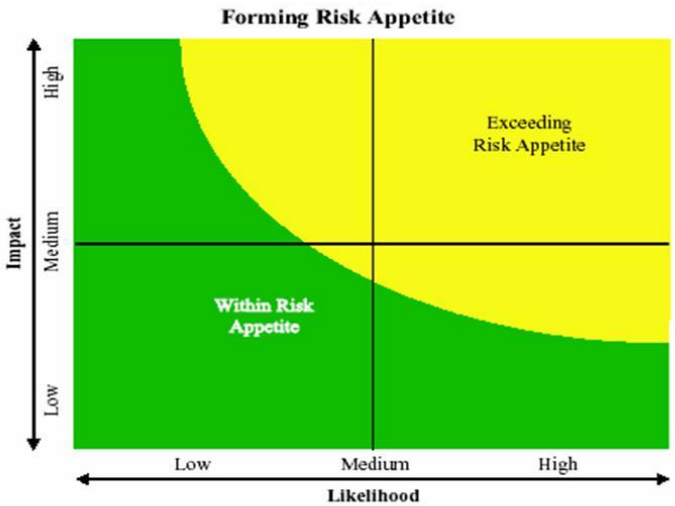
Evidence Against

- Reinsurers operate by having **diversified portfolios** i.e. many different insurer clients across many different countries
- Large claims for any individual insurer are small versus the size of the reinsurer
- Large claims are typically **non-systemic risks**, easily diversified, with **low capital cost**

Evidence Against

- Reinsurers accept **facultative** risks
- Facultative risks have much worse balance than treaties
- A **coherent risk appetite** would not accept facultative risks but not unbalanced treaty risks

Risk Appetite



Source : COSO ERM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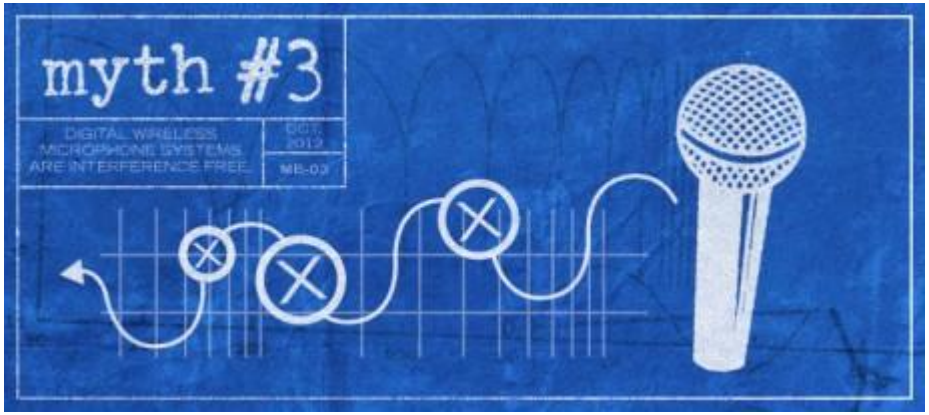

- **Myth 3:** “Sliding scale commission is good”

Origin of the Myth

- Insurers tend to be more optimistic than reinsurers about their future loss ratios

- So the reinsurer offers a sliding commission scale that gives more money to **reward the insurer** if the loss ratio result is as good as the insurer believes it will be

Evidence Against

- When loss ratio drops
  - Commission increases, BUT
  - Claims recoveries decrease, by the same amount
  - **Just a dollar swap**
  - ZERO net effect
- Sliding scale commissions reduce of reduce risk transfer
- At the extreme, there can be **zero risk transfer**


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- **Myth 4:** “Sliding scale commission is bad”

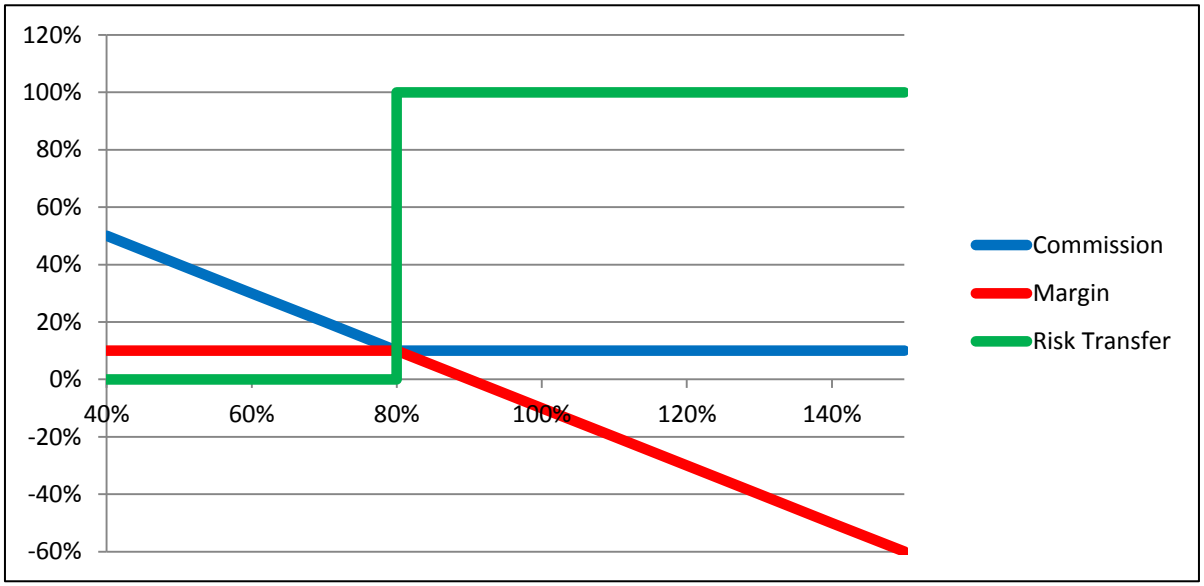
Origin of the Myth

- Regulators sometimes set **minimum risk transfer** targets
- These quantitative targets can be difficult to meet for proportional reinsurance, especially if sliding scale commissions are used

NAIC

National Association of Insurance Commissioners

Evidence Against



- Sliding scale commissions can be used to **shape risk transfer**
- Sliding scale commissions can replicate a stop loss reinsurance, for example
  - 1 for 1 sliding from 50% commission at 40% loss ratio, to 10% commission at 90% loss ratio
  - Same net payout as a stop loss with excess at 90% loss ratio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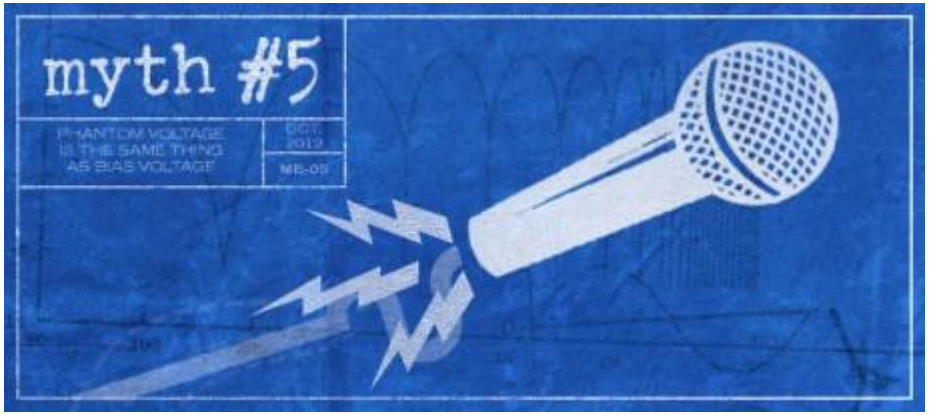
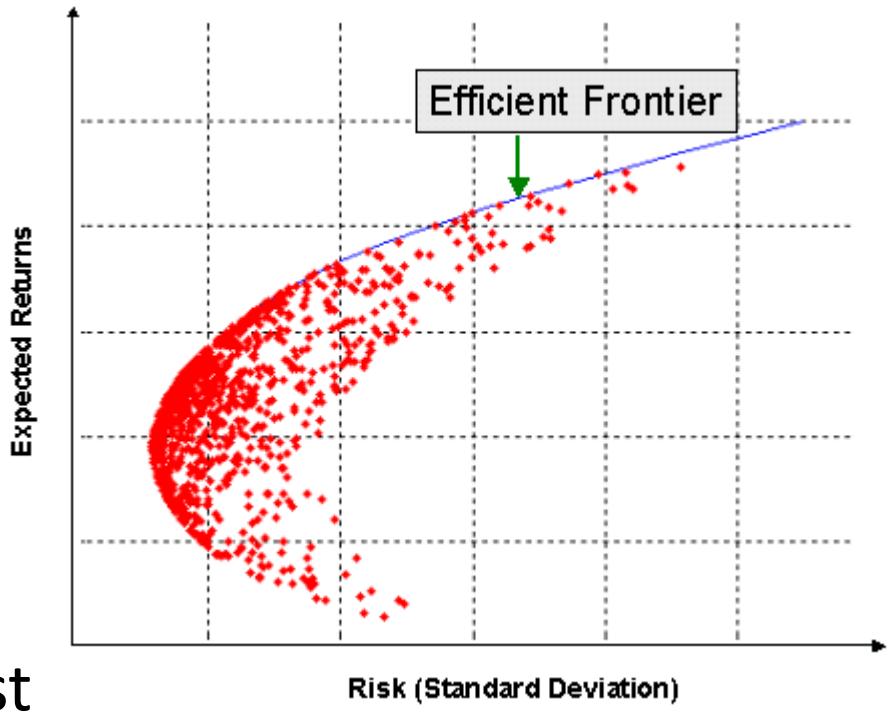


- **Myth 5:** “Reinsurance structure can be designed using a mean variance framework”

Origin of the Myth

- Reinsurance brokers seek to add value to their clients
- Insurers seek to optimise their reinsurance
- They want to compare the efficiency of different reinsurance structures, and maybe obtain an efficient frontier
- Until the last few years, most general insurers had not defined their risk appetite



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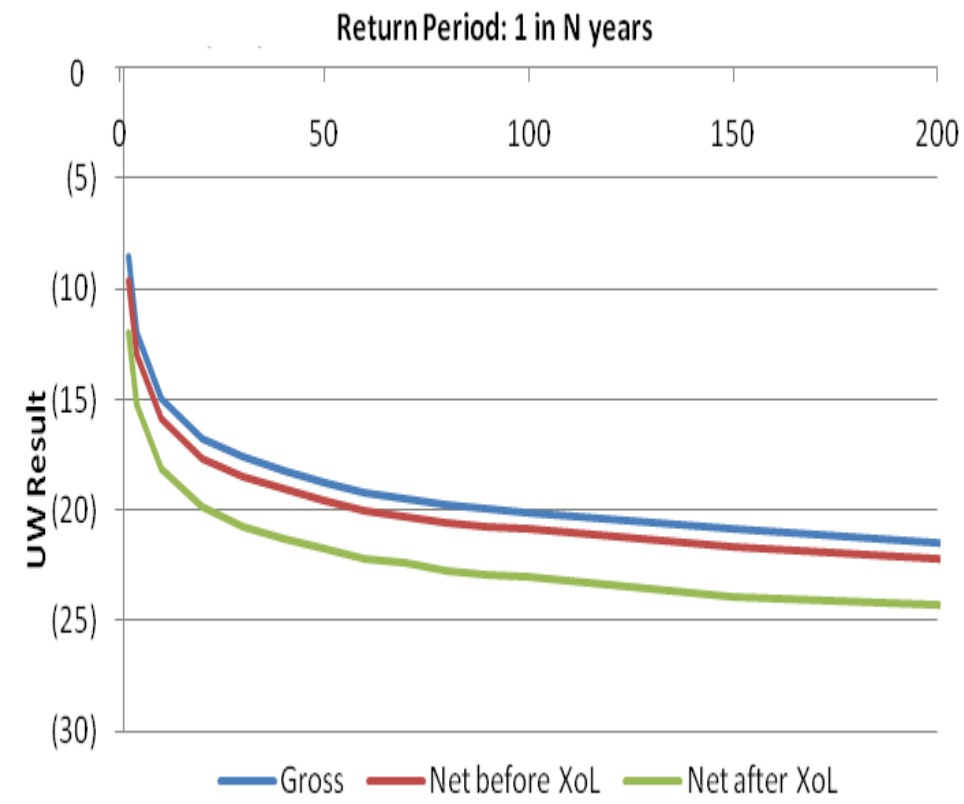

- Lower standard deviation does not necessarily mean lower risk
- It depends on
  - The cost of the reinsurance
  - The insurer's risk appetite


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Every Episode Must Have An Explosion!