Types of Reinsurance:

Non-Proportional

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Munich RE

NOT IF, BUT HOW

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Agenda

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- Clauses specific to Non-proportional treaty contracts

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01

Non-Proportional Reinsurance

Non-Proportional Reinsurance: Definition

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❑ **Non-Proportional Reinsurance:**

- Reinsured undertakes to pay all losses **up to a pre-agreed amount**. (Treaty **Priority** / **Deductible**)
- Reinsurers pay the balance of losses that exceed this amount – but only up to a pre-agreed **limit**. (Hence the terminology **'Excess of Loss' / XOL**.)

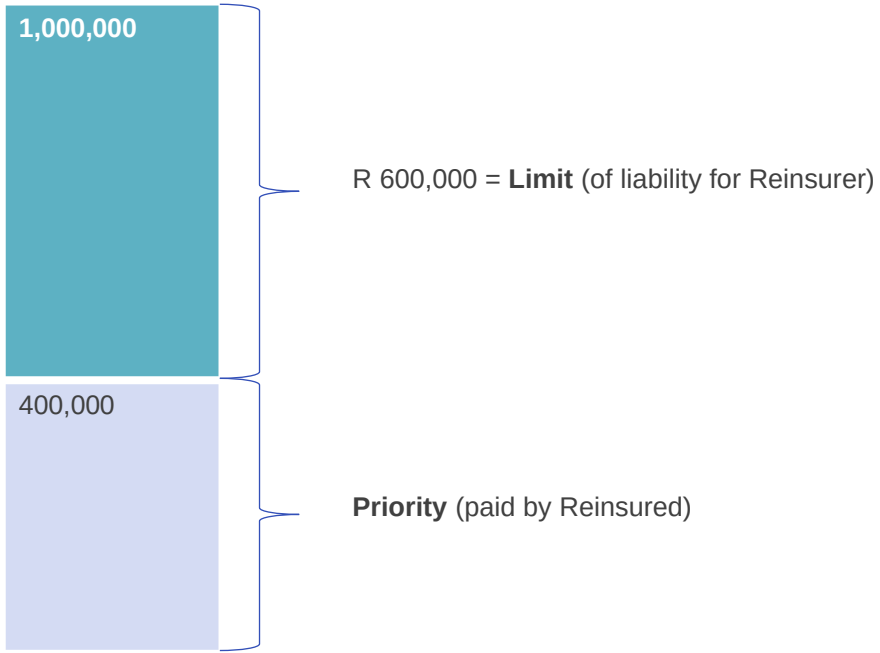
✓ Reinsured and Reinsurers do not share the risk, they share the **loss** on an XoL basis.

✓ Loss can mean a single loss or an aggregation of losses

- Reinsurer will calculate the premium required for this protection in advance. Unlike proportional reinsurance where the reinsurer receives its share of the Reinsured's Original Gross Premium (OGP) and therefore has to accept / follow the rates charged by the Reinsured, with non-proportional reinsurance, the Reinsurer determines its own rate.

Example

Treaty structure: R 600,000 in excess of R 400,000



Exercise

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- **In the event of a claim for R 900,000 to this XoL treaty:**
  - How much will the reinsured pay?
  - How much will the reinsurer pay?
- **In the event of a total loss of R 1,000,000 to this XoL treaty:**
  - How much will the reinsured pay?
  - How much will the reinsurer pay?
- **In the event of a R 1,200,000 loss:**
  - How much will the reinsured pay?
  - How much will the reinsurer pay?

Answer

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- **In the event of a claim for R 900,000 to this XoL treaty:**
  - Reinsured will pay R 400,000.
  - Reinsurer will pay R 500,000 (= R 900,000 – Treaty Priority of R 400,000)
- **In the event of a total loss of R 1,000,000 to this XoL treaty:**
  - Reinsured will pay R 400,000.
  - Reinsurer will pay R 600,000 (= R 1,000,000 – Treaty Priority of R 400,000)
- **In the event of a R 1,200,000 loss:**
  - Reinsured will pay R 400,000 + R 200,000 (the amount in excess of the treaty limit)
  - Reinsurer will pay R 600,000

Non-Proportional Reinsurance: Continued

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- **The level at which the treaty priority is set is influence by, inter alia:**
- Reinsured's financial strength (what the reinsured can afford to pat any one claim)
- Cost of reinsurance (limited capacity = higher rates)
- Reinsured's corporate strategy (e.g. Intention to grow therefore must retain premium income therefore high retentions)

✓ *Reinsurer wants to see that the Reinsured retains a sufficient financial interest in the business to ensure that it underwrites responsibly and manages its books properly.*

Advantages of Non-Proportional Reinsurance

1) Simple to operate therefore more economical in terms of cost of administration.

2) For the Reinsured:

- Good protection against frequency or severity of losses, depending upon the retention level.
- Allows for greater retention of premium.

Layering

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- ‘**Layering**’ means dividing the XoL cover into consecutives layers.
  - Treaty capacity: R 20 million
  - Treaty structure : R 19,000,000 xs R 1,000,000. Layered as follows:

R 12,000,000 xs R 8,000,000	**Layer 3**
R 5,000,000 xs R 3,000,000	**Layer 2**
R 2,000,000 xs R 1,000,000	**Layer 1**

  - The priority of layer 1(R1 million) = the priority of the whole cover.
  - The priority of Layer 2 (R3 million) = the sum of priority and limit of the previous layer.

i.e. Layer 1 priority of R 1 million + Layer 1 limit of R 2 million = Layer 2 priority of R 3 million, etc.

Layering

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- **Lower layers**
- Greater incidence of claims to the lower layers that to the higher layers.
- **Higher layers**
- Highest exposure but also further removed from losses than lower layers. Reinsurers therefore usually charge lower premiums for these layers
- It is easier to place a layered treaty because reinsurers can determine :
- **Which layers** they want to reinsure
- **How much (%) of each layer** they want to reinsure.

Basic Treaty Programme Structure

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❖ **Example**

- ABC Insurance Company has a 5% / 95% QS treaty
- The limit of the QS treaty is R 10 million on a Sum Insured basis.
- Apportionment of a risk with a Sum Insured of R 10 million:
  - ABC obliged to cede 5% (R 500,000) to the treaty.
  - ABC must retain 95% (R 9,500,000) for its net account

➢ **Reinsured's Net Account:**

- Business that is not protected by other proportional reinsurance.
- Comprised of :

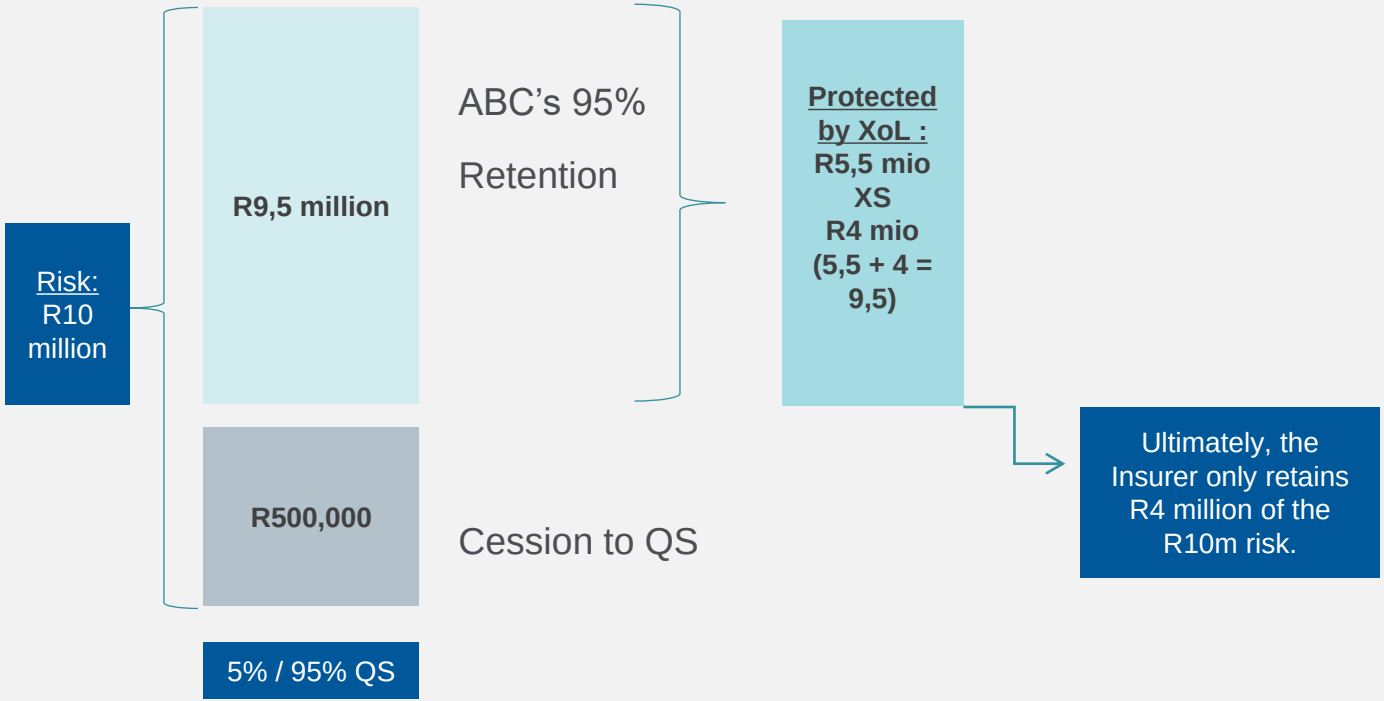
i. Risks that insurer can afford to retain 100%

ii. Risks that fall outside the scope of the proportional treaties, e.g. excluded by these treaties; portion of risks in excess of these treaty limits,etc.

Basic Treaty Programme Structure

- ABC buys a non-proportional (XoL) treaty to protect this net retention of R 9,500,000.
  For example, an XoL of R 5,500,000 xs R 4,000,000.
- This will reduce ABS's retention of R 9,500,000 to R 4,000,000 and is what is referred to as the Insurer's "net, net" account.

Example


Risk:
R10 million
R9,5 million
R500,000
5% / 95% QS
ABC's 95%
Retention
Cession to QS
Protected by XoL :
R5,5 mio XS
R4 mio
(5,5 + 4 = 9,5)
Ultimately, the Insurer only retains R4 million of the R10m risk.

Types of Non-Proportional Reinsurance: Per Risk XoL

Types of Non-Proportional treaties:

These are classified by the type of loss to which priority and limit are applied

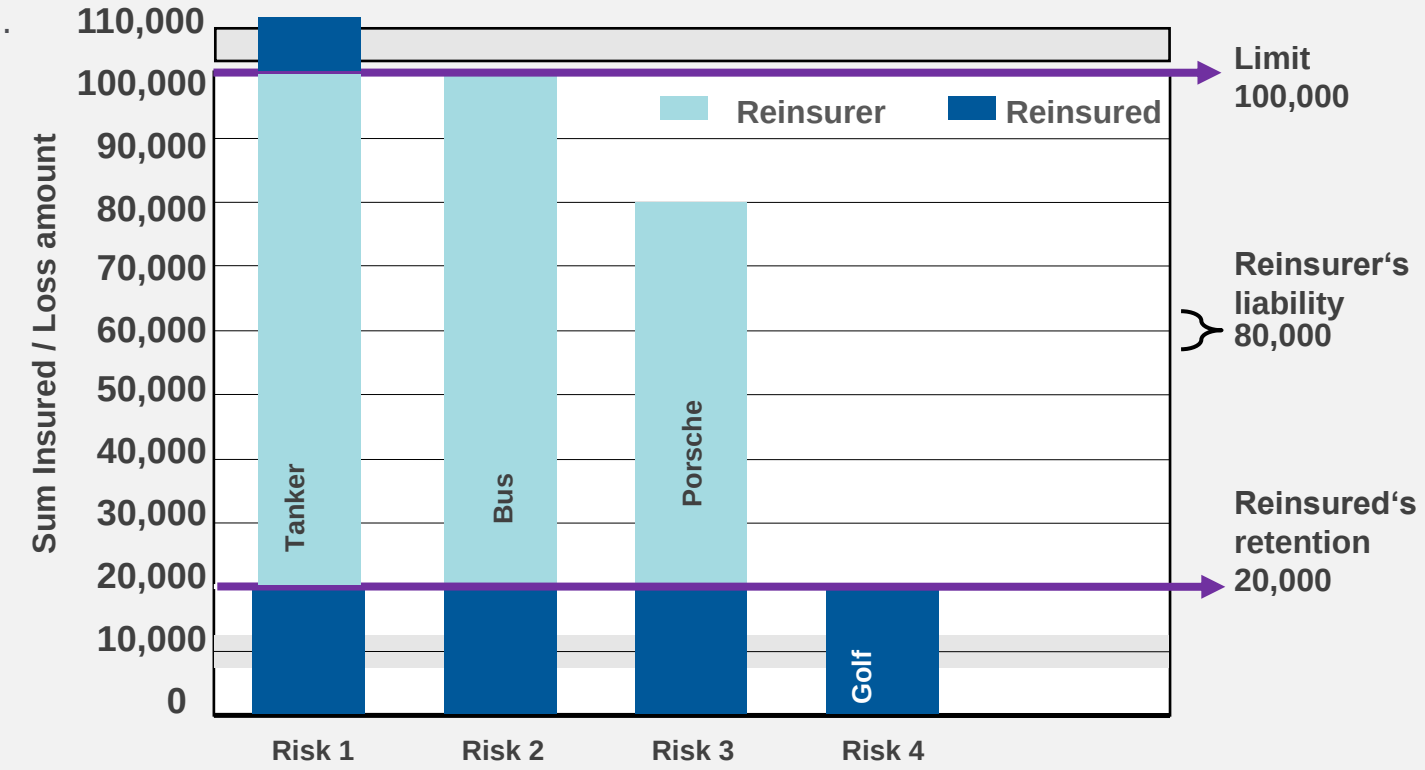
PER RISK XoL

- Priority and limit are applied to **single losses,** i.e. this type of treaty is designed to protect **individual risks** against **individual large losses** on **an excess of loss basis**.
- Treaty slip will state that the cover is in respect of **“each and every loss, each and every risk”.**
- The priority is usually set quite low and Reinsurers therefore expect to have to pay a number of claims. Hence, the reference to Per Risk XoLs as “Working Covers”.
- By limiting each loss to a specific amount (Priority is a fixed monetary amount), the Reinsured’s retained account is less exposed to fluctuations in results.

Per Risk XoL

- Reinsurers limit their exposure as follows:
  - **Per Risk** – by treaty limit
  - **In the Annual Aggregate** – by limiting the number of reinstatements
  - **Per Event** – by introducing an Event Limit. (Per Risk XoL not meant to be used as a Cat XoL)
- This type of treaty is an alternative to a Proportional Reinsurance.
  - Prop: Reinsured is paid commission by the Reinsurer.
  - Non-Prop: Reinsured retains more of the OGP.
  - Reinsured needs to take these kinds of things into consideration when structuring its reinsurance programme

Per Risk XoL structure: 80,000 xs 20,000



Example: Per Risk XoL structure: 80,000 xs 20,000

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Total Losses

	Loss	Reinsured‘s share	Reinsurer‘s share
Risk 1: Tanker	110,000		
Risk 3: Porsche	80,000		
Risk 4: Golf	20,000		

Example: Per Risk XoL structure: 80,000 xs 20,000

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Total Losses

	Loss	Reinsured‘s share	Reinsurer‘s share
Risk 1: Tanker	110,000	20,000 + 10,000	80,000
Risk 3: Porsche	80,000	20,000	60,000
Risk 4: Golf	20,000	20,000	0

Example: Per Risk XoL structure: 80,000 xs 20,000

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Partial Losses

	Loss	Reinsured‘s share	Reinsurer‘s share
Risk 1: Tanker	**80,000**		
Risk 3: Porsche	**10,000**		
Risk 4: Golf	**500**		

Example: Per Risk XoL structure: 80,000 xs 20,000

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Partial Losses

	Loss	Reinsured‘s share	Reinsurer‘s share
Risk 1: Tanker	80,000	20,000	60,000
Risk 3: Porsche	10,000	10,000	0
Risk 4: Golf	500	500	0

Types of Non-Proportional Reinsurance: CAT XoL

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CATASTROPHE XoL

- Priority and limit are applied to an accumulation of individual losses arising out of one event.
- Treaty slip will state that the cover is in respect of **“each and every loss occurrence arising out of one event”. ‘Loss Occurrence’ is defined as “all individual losses arising out of it and directly occasioned by one catastrophe”.**
- The Reinsured will add up all the losses from one event. Once the total amount reaches the priority of the treaty, the Reinsurer will start paying. Reinsurer pays the amount exceeding that priority, up to the treaty limit.
- The treaty priority will be set at a level that is higher than the Reinsured’s retention on any one risk i.e. at least 2 risks must be affected by the same event before the treaty priority is deemed to be exceeded. **(‘Two Risk Warranty’)**

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Example

- Reinsured insures 5 buildings in 1 street.
- It is unlikely that all 5 buildings will claim at the same time unless there is an event like an earthquake in which case all 5 buildings will be affected simultaneously.
- The Reinsured’s retention (priority) per building (per risk) may be affordable if considered individually, however, in the event of an earthquake which damages all 5 buildings simultaneously, the Reinsured would have to pay a total of 5 retentions in one go in terms of per risk cover (and will be limited to the number of reinstatements) and this may be affordable. Hence, the need for Catastrophe protection.

CAT XoL

- XoL treaties are subject to **annual aggregate recoveries**. The slip will specify the maximum amount that the Reinsured can recover from the treaty during the treaty period, i.e. The treaty will specify the number of times that the cover can be reinstated. Reinsurers offer limited / as few as possible reinstatements for Cat treaties.
- 1 event / occurrence means the Reinsured pays 1 treaty priority; 2 events / occurrences means the Reinsured has to pay 2 treaty priorities.
- The treaty is designed to guard against **perils** that are widespread / severe in effect.

  For example: Earthquakes, floods, hail, etc.

CAT XoL

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- ‘Event’ or ‘Occurrence’ must be defined in the treaty. This **‘Definition of any one loss Occurrence’** clause is accompanied by the **‘Hours’ Clause’** in Property Treaties. These clauses must address the following:

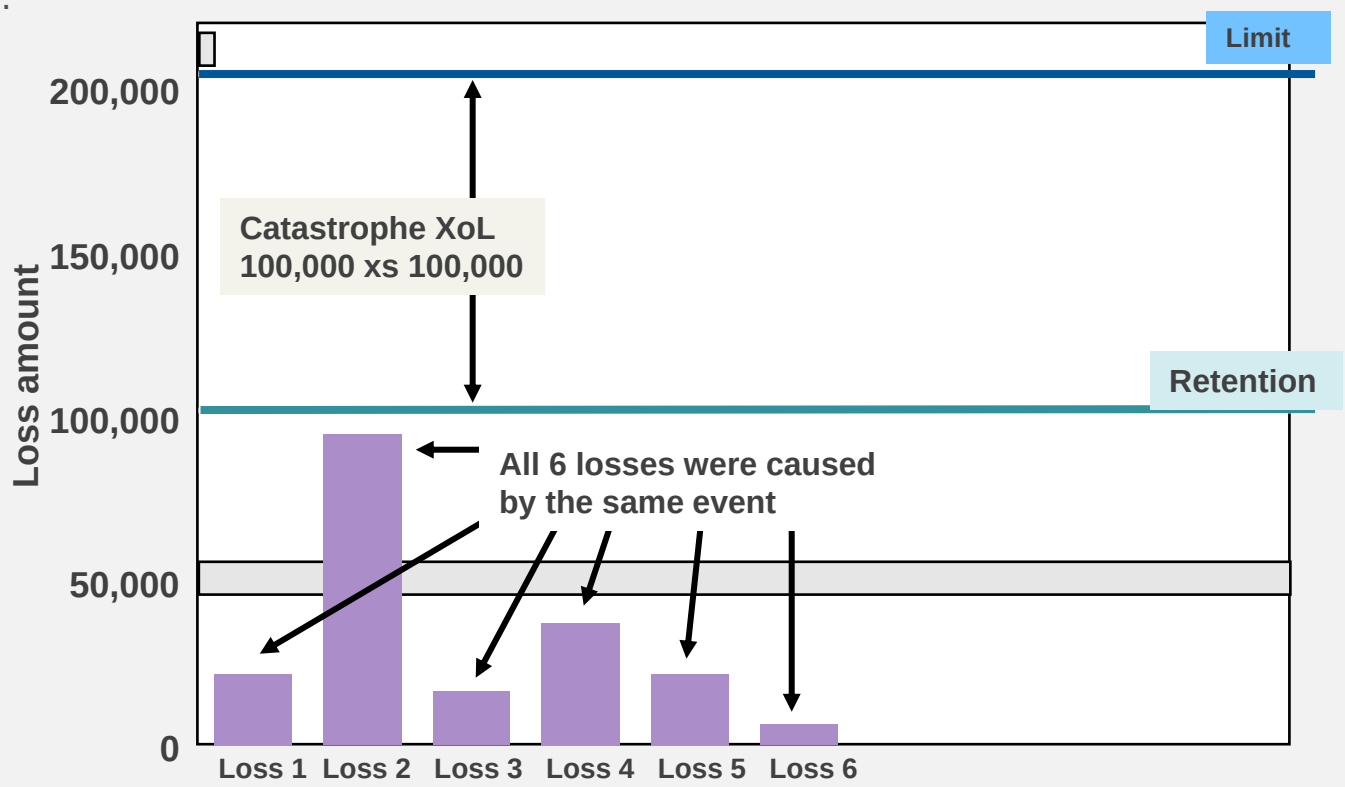
✓ List the perils covered by the treaty;

✓ All individual losses must have the same cause;

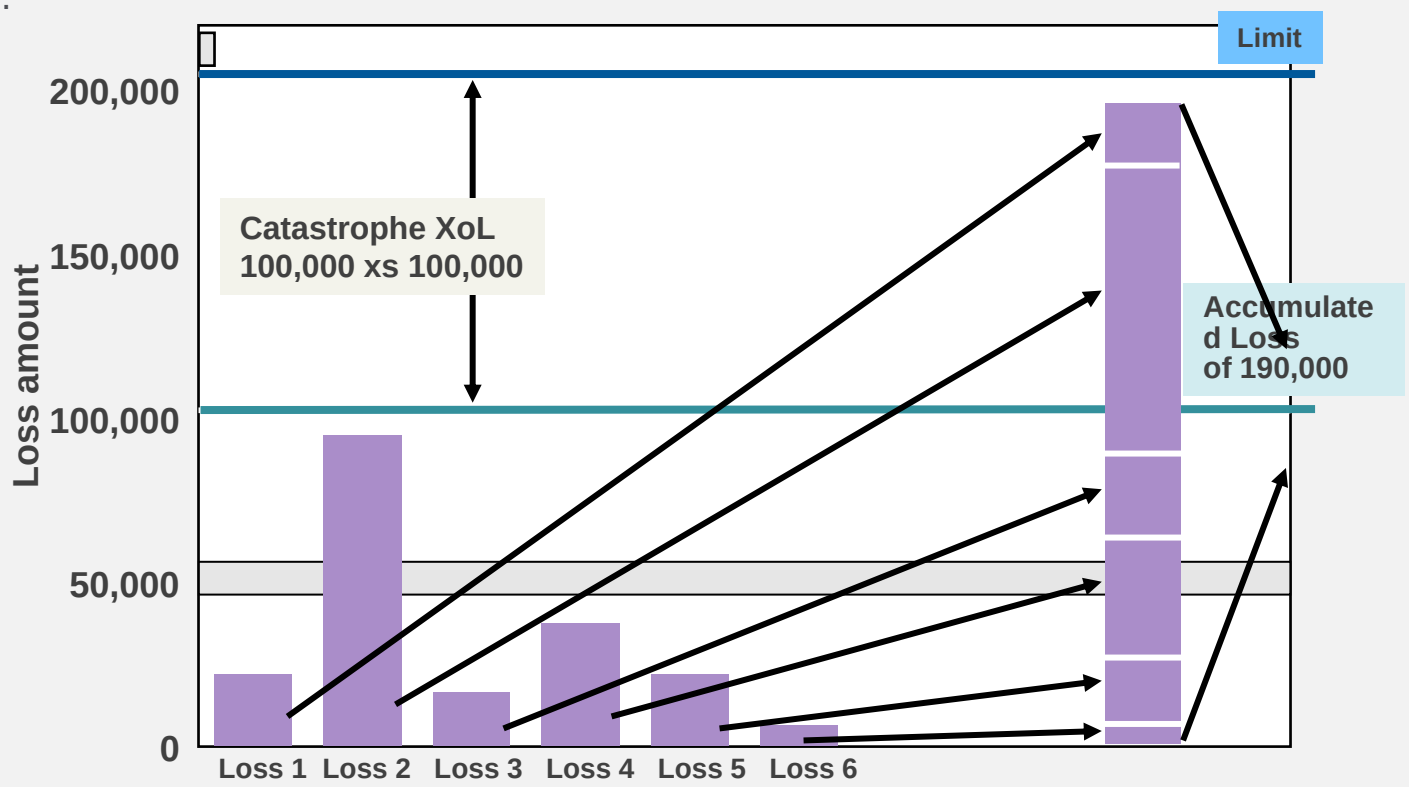
✓ Impose time and geographical limitations on the event, i.e. all individuals losses must occur in a contagious area and within a certain period of time (number of hours).

- For Casualty treaties, this ‘Definition of Loss Event / Allocation of Losses’ clause is worded slightly differently but the intention is the same.

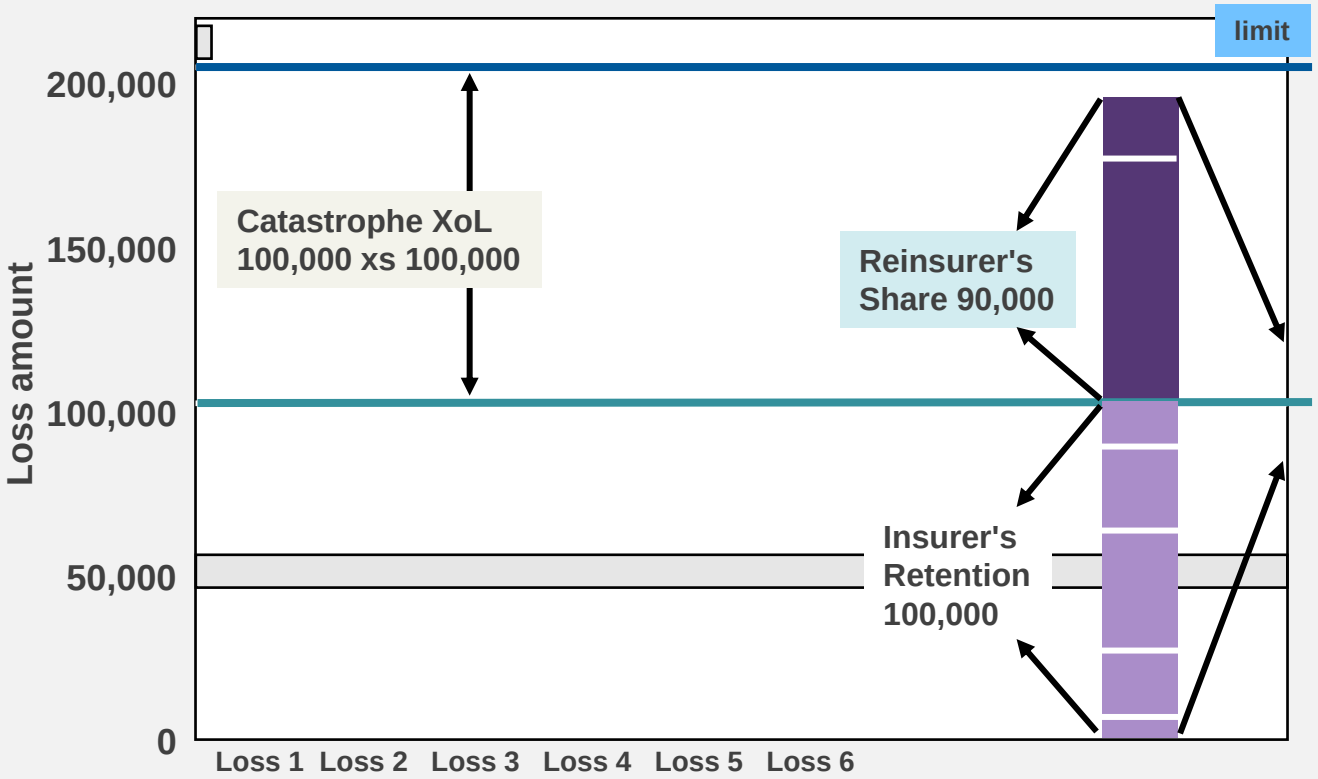
Cat XoL structure: 100,000 excess 100,000



Cat XoL structure: 100,000 excess 100,000



Cat XoL structure: 100,000 excess 100,000



Types of Non-proportional Treaty Reinsurance: Stop Loss

❖ **STOP LOSS**

➢ Per Risk XoL treaties reduce the Reinsured's exposure to individual large losses and CAT treaties, to aggregation of losses.

➢ Stop Loss reinsurance is designed to:

✓ **Prevent** wide **fluctuations.**

✓ Of the **loss ratio** of a particular account **/ class of business / from specified perils.**

✓ Over **one financial year** compared with another.

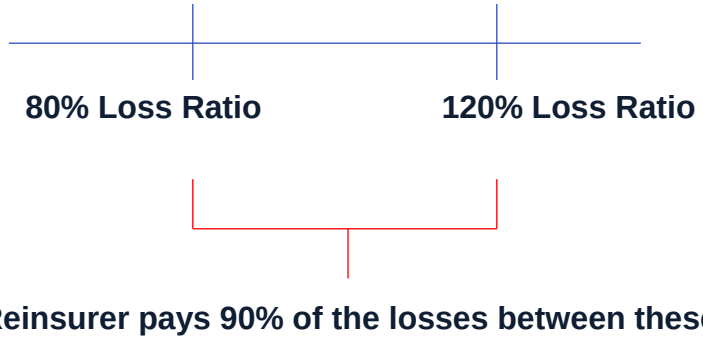
i.e. This type of treaty protects the Reinsured against a high frequency of claims during the period in question.

(The Loss Ratio is capped)

✓ This type of treaty is commonly used in the protection of **crop** portfolios insured against hail.

Stop Loss

- Treaty priority and limit are expressed in various ways. For example, as a fixed percentage of the premium (GNRPI)
- ✓ “To pay 90% of all losses in excess of an 80% Loss Ratio up to a 120% Loss Ratio”.
  - Priority = 80% LR;
  - Treaty limit = 120% LR
- However, the **maximum liability of the Reinsurer and the minimum retention of the Reinsured should also be fixed** i.e. expressed in absolute amounts*, so that maximum exposure is known. This is important in case the actual GNPRI exceeds estimated GNRPI.



*Except crop business – commodity prices fluctuate

Stop Loss

1. The Reinsurer is not liable to continue to losses until the Reinsured's Loss Ratio exceeds an agreed %.

   (80% in our example)

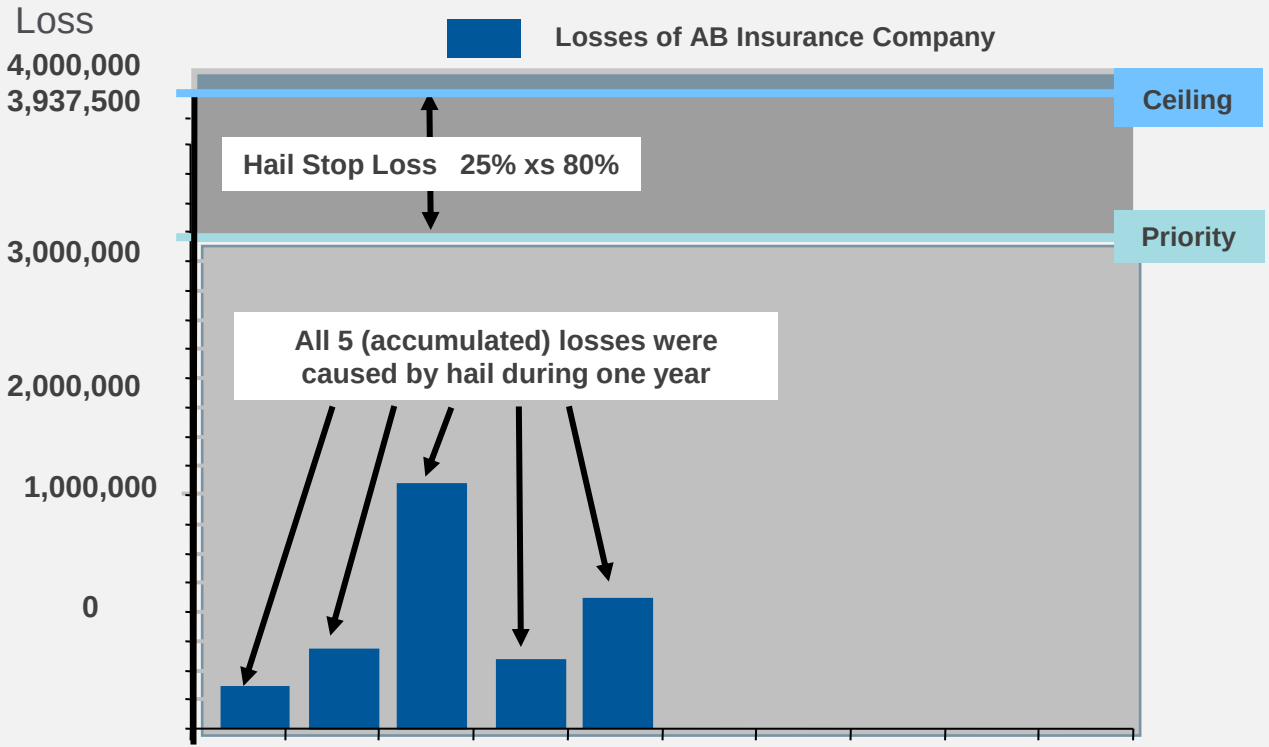
2. Thereafter, the Reinsurer will pay an agreed % of losses (90%), up to the treaty limit – which is also expressed in the form of a loss ratio (120%).

3. Ideally, the Reinsurer should not start paying until the Reinsured has incurred a loss i.e. their LR > 100%.

   Also, the Reinsurer should not pay 100% of the losses.

   This will ensure that the Reinsured underwrites quality business / manages its book profitably.

Stop Loss: 25% xs 80%; GNRPI 3,750,000



Stop Loss: 25% xs 80%; GNRPI 3,750,000; **Claim: 3,500,000**

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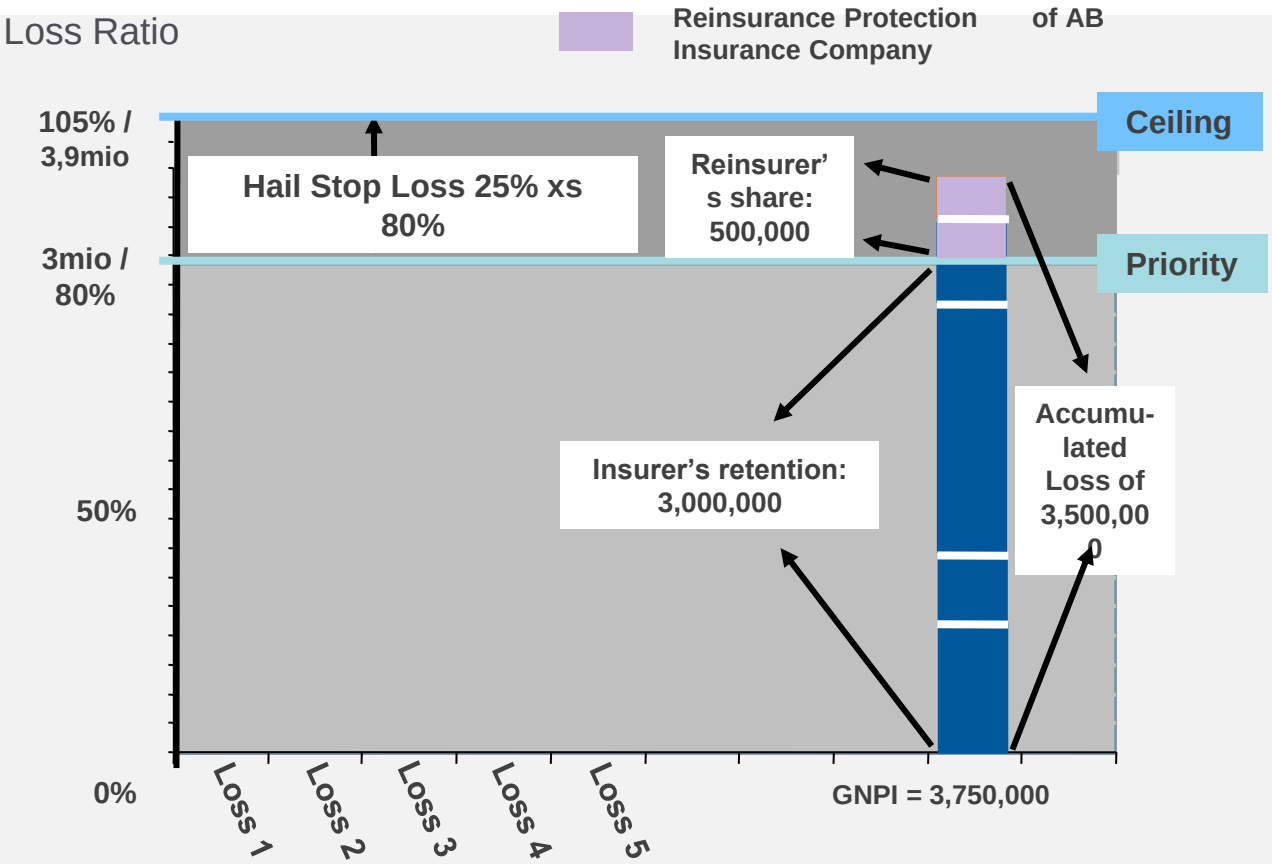

Gross Net Retained Premium Income

❑ **Proportional:**

- Reinsured pays a portion of the original gross premium (OGP) to Reinsurers.

  (In proportion to the sharing of the risk)

❑ **Non-Proportional:**

- The balance of premium is retained by the Reinsured and protected by Non-proportional Reinsurance.

  This = **Gross Net Retained Premium Income (GNPRI)**

GNPRI

❑ **GNPRI is defined as follows in the treaty wordings:**

- Original Gross Premium accounted for by the Reinsured **during the period of the treaty**
- On business protected hereunder
- Less only:

a. **Returned** premiums

and

b. Premiums paid for reinsurances, recoveries under which inure to the benefit hereof.

- Basically, the business protected by the Non-proportional treaty is the OGP (gross of commission), less refund premiums (cancellations , etc.), less reinsurance premium ceded to the proportional treaties.

  (Deduct the proportional premium because this exposure is protected under the proportional treaties)
- SASRIA premium should also be deducted. (Not part of the exposure being protected)

Minimum / Deposit Premium

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❑ The Reinsurer calculates the premium that the Insurer must pay for Non-Proportional reinsurance treaties.

- Reinsurance underwriters price the business (Using the Insurer's prior loss experience, estimated premium income, exposure info, etc.) and come up with a **rate** per layer.
- This rate could be a **flat** rate or a **variable** rate. (Mostly flat rates in our market)

✓ A variable rate varies according to the performance of the treaty. There will be a minimum and a maximum rate.

- This rate is applied to the GNRPI to arrive at the amount of premium that the Reinsured must pay to Reinsurers for the cover.
- Reinsurers allow a 10% discount in case the Reinsured does not meet their estimated premium income.
- This 90% premium payment due by the Reinsured is called the **'Minimum and Deposit Premium' (MDP) or 'Deposit Premium'**. **(MDP only in our market)**

MDP Adjustment

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❑ The MDP / DP is paid to Reinsurers in installments – Usually quarterly or semi-annually in advance.

- At inception of the treaty, the rate is applied to the **estimated** GNPRI. (Hence, the premium paid by Reinsured is a **deposit** premium)
- At expiry of the treaty period, the **actual** GNRPI will be known.

✓ A premium adjustment is calculated and the difference between the estimated and actual premium is determined. (Referred to as the “MDP Adjustment”)

- If actual GNRPI x rate > MDP / DP: additional premium is due to the Reinsurer.
- If actual GNRPI x rate < MDP / DP:

- **For MDP**: No refund of premium by Reinsurer to Reinsured because it was a ***minimum*** and deposit premium.
- **For DP:** Reinsurer must refund the difference to the Reinsured because it was a **deposit** premium only i.e. no minimum premium was required.

Example: MDP Adjustment

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❑ **Exercise**

- **EPI:** R 450,000,000

✓ **Layer 1**

- MDP: R 630,000 payable in 2 equal installments
- Adjustable at a rate of 0.1556%

➢ **Calculate the adjustment premium if:**

1. The actual GNRPI = R 455,000,000
2. The actual GNRPI = R 400,000,000

Example: MDP Adjustment

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❑ **Solution**

1. *If actual GNRPI = R 455,000,000, adjustment premium =*

   R 455,000,000 x 0.1556% = R 707,980 less MDP R 630,000 = R 77,980

   Additional premium to be paid by Reinsured to Reinsurer = R 77,980.

2. *If actual GNRPI = R 400,000,000, adjustment premium =*

   R 400,000,000 x 0.1556% = R 622,400. This is R 7,600 less than the MDP of R 630,000

Therefore:

- No additional premium is due by Reinsured
- Reinsurer does not have to refund the amount of R 7,600 to the Reinsured because this is a **minimum** & deposit premium.

Reinstatements

- In the event of a claim, the cover is **reduced** by the amount of the claim unless it is reinstated to the full amount of the cover.
- “Reinstatement” is a multiple of the original limit. The number of reinstatements indicate the number of limits ***in addition to*** the original limit, granted to the Reinsured for the treaty year.
  - i.e. Reinstatements enable the Reinsured to recover more than just one total loss to the layer.
- The treaty contract will specify the number of reinstatements **per layer** for the treaty period.
  - Reinsurers should agree to as few as possible, ideally only 1 reinstatement for Cat treaties.

Reinstatements

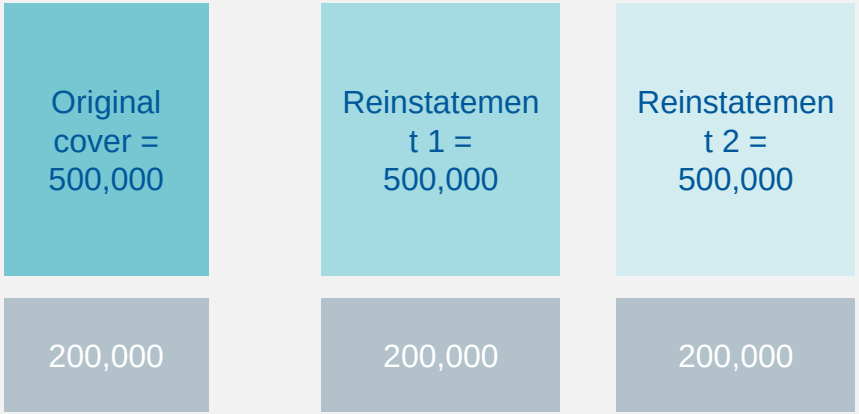
- ❖ The Reinsured has to pay **additional premium** when the cover is reinstated.
- ➢ Reinstatement premium can be any / all of the following:
  - “Free” i.e. pre-paid (Reinsurers will price for this)
  - Any percentage of the premium e.g. 100%; 50%; 125%, etc.
  - Pro-rata to amount reinstated.
  - Pro-rate to time remaining until treaty period expires. **(Not given in our market)**
- ✓ Most treaty reinstatement conditions are ‘100% additional premium to time, pro-rata to amount’.
  - Reinsurers off-set the reinstatement premium against the claim payment.

Reinstatements

- If the loss settlement takes place **after** the end of the treaty year (after the MDP adjustment), the reinstatement premium is calculated using the **actual** GNRPI.
- If the loss settlement takes place before the end of the treaty year (before the MDP adjustment), then the reinstatement premium is calculated provisionally using the MDP figure. When the actual GNRPI figure is known, the reinstatement premium must be re-calculated using this actual GNRPI figure.

Reinstatements

Example: Treaty 1/1/ - 31/12; R 500,000 xs R 200,000 with 2 reinstatements:



Total cover for the year =

Original limit (500,000) + 1st r/statement (500,000) + 2nd r/statement (500,000) = 1,500,000

- In treaty contracts this amount appears in the Slip as “Annual Aggregate Recovery.”

Reinstatements

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Reinstatement Premium formulae:

Pro rata to amount, 100% to time

$$\frac{\text{Loss to Cover}}{\text{Cover}} \times \text{Premium}$$

Pro rata to amount and time

$$\frac{\text{Loss to Cover}}{\text{Cover}} \times \text{Premium} \times \frac{\text{time (days) left before treaty expires}}{365 \text{ days}}$$

Example: Reinstatements

➢ **Example:**

- XoL Treaty R 500,000 xs R 200,000 for 1 Jan – 31 Dec
- 1 reinstatement 100% additional premium to time, pro rata to amount
- Premium (MDP) = R 25,000
- Claim = R 600,000 on 1 Sept

➢ **Exercise**

Calculate the reinstatement premium:

1. In accordance with the condition above
2. As above but pro rata to time and amount

Example: Reinstatements

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- **Solutions:**

1. *Reinstatement Premium*

   = 400,000** X 25,000

   500,000

   = R 20,000

** R 600,000 – R 200,000 (Priority) = loss to cover

2. Reinstatement Premium

   = 20,000 X 4/12 = R6,666

Non-Proportional Reinsurance: Basis of Cover

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- Non-proportional treaty cover is on one of the following bases:

1. Losses Occurring

- The Reinsurer is liable for losses that occur during the treaty period, i.e. Date of Loss must fall within the treaty period.
- Most common basis

2. Risks Attaching

- The Reinsurer is liable for losses **attaching to insurance policies issued or renewed during** the treaty period.

QUESTIONS ??

Thank you for your attention!

March 2023

Naren Lalloo

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Image: Munich Re