



Technical Annex to the Guidelines on the application of outwards reinsurance arrangements to the non-life underwriting risk sub-module

Technical Annex I: working of the disaggregation or re-aggregation approaches

This annex describes how to apply Section V and more generally how the disaggregation/re-aggregation approaches are working in order to apply a relevant and consistent approach for the different reinsurance covers within the non-life catastrophe sub-module. 2 methods are shown and the undertaking will need to establish which of these are most suitable

Principle behind method 0:

When estimating reinsurance recoveries from aggregate covers using Method 0, the undertaking applies the joint cover to the output from each sub-module separately and ensures the reinsurance recoveries assumed are within the policy limits

Principle behind method 1:

When estimating reinsurance recoveries from aggregate covers using method 1, undertakings should identify the most granular component (or earliest common ancestor) within the flowchart for non-life underwriting risk which spans the relevant sub-modules.

- (a) For an aggregate cover protecting against wind and hail losses, this component would be Nat Cat;
- (b) For an aggregate cover protecting against wind and motor losses, this component would be NL Cat.

The next step is to work out the gross diversified loss for this component or common ancestor and then allocate back to more granular components in order to apply the aggregate cover. The resulting components are then combined to calculate the SCR_{NL cat}.

1) Windstorm – reinsurance at country(/region) level - EEA

- (a) Calculate gross diversified loss at EEA level taking into account diversification effects between countries/regions;

- (b) Allocate back (disaggregation according to GL 7) to country level within EEA (gross country but EEA diversified);
- (c) Apply country-level reinsurance cover to gross diversified EEA country loss;
- (d) Add up net diversified country components to get SCR_{wind} net of country level reinsurance cover.

2) Windstorm (EEA and non EEA) - reinsurance at country/region level for EEA and non EEA and reinsurance aggregate cover (all territories)

- (a) Steps in (1) for country level reinsurance cover within EEA;
- (b) Steps in (1) for country level reinsurance cover within non EEA (substituting non EEA for EEA and substituting GL8 for GL7);
- (c) Calculate gross diversified loss at peril windstorm level (net of country level reinsurance covers and taking into account diversification effects between EEA and non EEA);
- (d) Apply EEA and non EEA aggregate reinsurance cover to obtain net SCR_{wind} (net of both country level and EEA/nonEEA reinsurance covers).

3) Windstorm – reinsurance at country level followed by aggregate reinsurance of Windstorm and Hail.

It would typically be expected that the method below to be used for the joint wind hail cover.

Method 1

- (a) Do steps in (2) (steps in (1) sufficient if no EEA/non-EEA aggregate cover) for windstorm and hail separately to get net SCR_{wind} and net SCR_{hail} (net of country level reinsurance covers);
- (b) Calculate diversified loss at Nat Cat level (net of country level cover taking into account diversification effects between all Nat Cat sub-modules but of aggregate reinsurance cover);
- (c) Allocate back to wind and hail sub-modules (probably spread) to obtain SCR_{wind*} and SCR_{hail*} (net of country level reinsurance covers but Nat Cat diversified);
- (d) Apply aggregate reinsurance cover across net SCR_{wind*} and net SCR_{hail*} to obtain net $SCR_{windhail}$ (net of both country level and aggregate Windstorm and hail reinsurance covers);
- (e) Add net $SCR_{windhail}$ + net $SCR_{earthquake}$ + net SCR_{flood} + net $SCR_{subsidence}$ to get net SCR_{natcat} (net of both country level and aggregate Windstorm and hail reinsurance covers).

Method 0 – (not expected to be used, but a description of the method is shown below):

- (a) Do steps in (2) for windstorm and hail separately to get net SCR_{wind} and net SCR_{hail} ;

- (b) Apply the joint cover separately to wind and hail sub-modules;
- (c) Diversify all the natural catastrophe sub-modules to generate net SCR_{natcat} ;
- (d) Check that net SCR_{natcat} does not generate recoveries on the joint reinsurance cover that are greater than the maximum permissible;
- (e) If this is the case, method 1 has to be used.

4) Reinsurance at country level for windstorm and risk specific for motor, followed by Aggregate Cover windstorm and motor TPL.

As above, we would expect method 1 to be used.

Method 1

- (a) Windstorm steps in (2) (steps in (1) sufficient if no EEA/non EEA aggregate cover) to get SCR_{wind} (net of country level reinsurance covers);
- (b) Apply Motor TPL specific reinsurance cover to get SCR_{motor} (net of risk specific reinsurance cover);
- (c) Calculate diversified loss at SCR_{natcat} and $SCR_{man-made}$ level (net of country level reinsurance cover within Windstorm and net of motor TPL risk specific reinsurance cover) using outputs from other sub-modules of SCR_{natcat} and $SCR_{man-made}$;
- (d) Calculate diversified loss at SCR_{cat} level taking into account diversification effects between SCR_{natcat} and $SCR_{man-made}$ (net of country level reinsurance covers and motor risk specific reinsurance cover but gross of aggregate windstorm and motor reinsurance cover) and allocate back (disaggregation with spread method) to SCR_{natcat}^* and $SCR_{man-made}^*$ and back again to SCR_{wind}^* and SCR_{motor}^* (net of country level Windstorm and motor TPL specific reinsurance but SCR_{cat} diversified);
- (e) Apply aggregate windstorm and motor TPL reinsurance cover to get net $SCR_{windmotor}$;
- (f) $SCR_{cat} \text{ (after aggregate cover)} = SCR_{cat} \text{ (before aggregate cover)} - SCR_{wind} - SCR_{motor} + \text{net } SCR_{windmotor} \text{ (after aggregate cover)}$.