2020 review of Solvency II

Further recognition of non-proportional reinsurance in the SCR standard formula

Any views provided in this document are tentative views at working group level and should not be understood as EIOPA positions.

This paper is focused on (i) the recognition of non-proportional reinsurance as tested in the information request for the holistic impact assessment and (ii) on the recognition of Adverse Development Covers of the SCR standard formula.

Extract from call for advice

3.8. Risk-mitigation techniques and other techniques used to reduce Solvency Capital Requirements EIOPA is asked to advise on methods for the recognition of the most common non-proportional reinsurance covers for non-life underwriting risks in the Solvency Capital Requirement standard formula, as well as for adverse development covers and finite reinsurance covers. […]

Relevant legal provisions

Article 117 (3) Delegated Regulations:

For all segments set out in Annex II, the standard deviation for non-life premium risk of a particular segment shall be equal to the product of the standard deviation for non-life gross premium risk of the segment set out in Annex II and the adjustment factor for non-proportional reinsurance. For segments 1, 4 and 5 set out in Annex II the adjustment factor for non-proportional reinsurance shall be equal to 80 %. For all other segments set out in Annex the adjustment factor for non-proportional reinsurance shall be equal to 100 %.

Identification of the issue

Adverse Development Covers are a form of retrospective reinsurance in which the insurer cedes the claims development risk associated with policies from past

underwriting periods. They cover the risk that the existing claims reserves are not sufficient to cover the insurance obligations (i.e. reserve risk) for a defined portfolio or segment.

Although it is widely recognised that non-proportional reinsurance can have a significant risk-mitigating effect, the explicit recognitions of these non-proportional structures is currently limited to an adjustment for reinsurance of the 'volume measure' and furthermore to three segments (1, 4 and 5) for premium risk.

Stakeholders have proposed various options to give more recognition to the non-proportional reinsurance structures (both in premium and reserve risk). In the holistic impact assessment at the beginning of 2020, a proposal to give more recognition to non-proportional reinsurance in the 'premium-risk-module' was tested. The outcome of this test was not satisfactory for multiple reasons:

(1) It showed that the impact on an overall basis was negative, which means that the overall capital needs unintentionally rise.
(2) Secondly, the data submitted by Stakeholders to EIOPA were too limited and incomplete to perform an in-depth analysis to allow EIOPA to test numbers back and assess why the numeric impact of the proposal turned out to be contrary to expectations.

Internal analysis and discussions with stakeholders showed that the (necessary) complexity of the proposal was probably the reason for this outcome. Due to the possible complexity some (re)insurers might have misunderstood the proposal and therefore submitted 'wrong' input, others might have found the calculation too burdensome and decided not to calculate the impact as they expected little capital relief in their portfolio. Next to this, since the proposal would have replaced the current non proportional reinsurance capital relief that gives relief on three segments (1, 4 and 5) indifferent of actual non-proportional reinsurance in place, this would not be in place anymore.

As a result, the EIOPA proposal to give more recognition to non-proportional reinsurance in the 'premium risk sub-module' might not be further considered.

Notwithstanding this outcome on the premium risk sub-module, the possibility to create a new proposal for reserve risk and give recognition to the so called Adverse Development Covers (ADCs) is explored. The possible recognition of ADCs was not part of the Holistic Impact Assessment because currently there are very few ADC-structures in place and data eventually provided by stakeholders would have been limited in scope and number, thus highlighting a neglectable impact for further recognition of capital relief.

Previous EIOPA advice on this topic

On 28 February 2018, EIOPA published a second set of advice to the European Commission[1] on specific items in the Solvency Delegated Regulations. The following conclusions were drawn from the in-depth analysis:

Adverse development covers

2273. Stakeholders have made a proposal to recognise specific type of non-proportional reinsurance via a formula to be applied in the premium and reserve risk sub-module.

2274. EIOPA has engaged on an intense dialogue with stakeholders on their proposal. EIOPA's analysis showed that the proposal would allow for cases of underestimation of the real risk. Several amendments were discussed with stakeholders but none could address this deficiency.

2275. The only case where the proposal of stakeholders would work is the case of mono-liner insurers. EIOPA believes that it would not be appropriate to recognize these covers only in that specific case, since it would create a difference of treatment with multi-liner insurers.

2276. EIOPA does not advise recognizing adverse development covers on the basis of the stakeholders' proposal.

This decision was taken after a series of possible refinements on the proposal, including putting limits to the characteristics of the treaties that can be covered by the proposed methodology. Those limits concern the attachment point and the exit level:

- The attachment point shall not exceed 1.05 times Best Estimate reserves;
- The exit level shall not exceed Best Estimate reserves times (1 + 3 x reserving risk factor).

After analysing these refinements the following conclusion was drawn:

Although differences are small (-0.5% was the minimum for the first three columns where the limitations proposed by stakeholders are supposed to avoid underestimation), in the end, it seems that even with the proposed refinements there are cases of underestimation and that the bigger the part of the portfolio not covered by the ADC, the more the risks are potentially underestimated. The latter is particularly a problem because by definition of ADC, it covers policies from past underwriting periods, i.e. in kind of run-off, which means that the part of the portfolio covered by ADC is meant to decrease as time passes by. Potential under-estimation would then necessarily increase through time.

Furthermore the analysis of 2018 states the following:

The standard deviation for reserve risk has been calibrated on a net of reinsurance basis. That means it includes already the average effect of reinsurance, including non-proportional reinsurance, on reserve risk at the time

[1] https://www.eiopa.europa.eu/sites/default/files/publications/submissions/eiopa-18-075-eiopa_second_set_of_advice_on_sii_dr_review.pdf

of the calibration. Regular updates of the calibration should ensure that the average effect continues to be appropriately captured.

Stakeholders however argued that, given the limited amount of ADCs existing in the market, the net of reinsurance calibration might be misleading. Even though the former advice from 2018 suggested not to proceed on recognition of ADC in the Standard Formula, EIOPA continued the discussions in 2019 and 2020 and performed some further analyses on data applied to case studies.

Analysis

Based on the outcome of the analysis performed in 2018, which shows that underestimation is one of the risks of amending the current framework, the following adjusted formula was proposed, where, for reserve risk, the adjustment factor as mentioned in Article 117(3) DR can be calculated in the following way:

$adjustment\ factor = \frac{(A-(B-C)*D*E)}{A}$ where

A. Impact on basic own funds of reserve risk scenario as defined under the Standard Formula = Nominal best estimate net reserves x Standard deviation for non-life gross reserve risk of the segment x 3
B. ADC recovery under reserve risk scenario = computed as the lower of the following:
   - Nominal best estimate net reserves covered by the reinsurance structure x (1 + 3 σ(res,s)) – reinsurance structure attachment point
   - Reinsurance structure cover size
C. Additional reinsurance premium or the equivalent thereof
D. Cession to the reinsurer in %
E. Prudency factor in %

Stakeholders have provided EIOPA with several case studies to show the impact of the ADC cover both on the balance sheet (with and without application of ADCs) and on the SCR-calculation. These cases show that the capital relief based on the above defined formula is commensurate with the risk relief.

The analysis from 2018 shows the formula might work in case there is only one line of business. The doubts arise in case other lines of business are added to the examples (be it with ADC cover or without), because of diversification and correlation effects.

However, the case studies do not seem to confirm these concerns from the 2018-analysis on the risk of underestimation[2]. With the limitations proposed in 2018 regarding the attachment and detachment point, the risk of underestimation may be limited.

[2] It should be recognised that during the 2018 analysis, these case studies were not available and EIOPA had to base its conclusions on, at that date, very limited available SII-reported data.

Nevertheless, to overcome the risk of possible underestimation, a prudency factor could be added into the formula, based on reported data, on a bi-annual basis.

Next to the above, the limitations that were analysed in 2018 can still be kept in the proposal

- The attachment point shall not exceed 1.05 times Best Estimate reserves;
- The exit level shall not exceed Best Estimate reserves times (1 + 3 x reserving risk factor).

The first limitation, on the attachment point, showed more stable and prudent results in the 2018 analysis. The limitation on exit level is to prevent huge covers that would result in a negative SCR.

Stakeholders argue that a typical attachment point of an ADC-transaction is anyhow (close to) the Best Estimate and the limit is usually defined around the 99.5 percentile (giving full recognition of the Solvency II corner stones).

Additionally, to overcome the issue of reserves decreasing in ADC-covered lines of business compared to other lines, undertakings could be required to perform on an annual basis, the recalculation of the cover, possible reinsurance recoverable, the attachment point and premium wrt. the AD covers in place. This could overcome the risk of the attachment point drifting away from the decreasing reserves over time and therefore decrease the risk of underestimating the risk.

Finally, it may not be prudent to recognise multi line covers (there is always a risk that a cover may be exhausted by an adverse development in one line, leaving the other line partially uncovered), therefore recognising only AD-covers that cover one specific group of policies (with the same risk characteristics within the same segment) at the time with it's own attachment and detachment point could be considered. It could however be possible to have multi lines covered, but not in the same (sub)contract. An overall contract might be useful.

Recognition of adverse development covers in the Standard Formula

The standard formula is criticized by stakeholders for not sufficiently recognizing non-proportional reinsurance covering non-life risks.

The non-life underwriting risk module is composed of several sub-modules. Non-proportional reinsurance is usually relevant for the premium and reserve risk sub-module and the catastrophe risk sub-module.

In the holistic impact assessment a proposal to give recognition for non-proportional reinsurance on 'premium risk' was tested. The outcome of this test was twofold

(1) It showed that the impact on an overall basis was negative, which means that the overall capital needs unintentionally rise.
(2) Secondly, the data submitted by Stakeholders to EIOPA were too limited and incomplete to perform an in-depth analysis to allow EIOPA to test numbers back and assess why the numeric impact of the proposal turned out to be contrary to expectations.

However, it could be considered to recognize adverse development covers on the basis of the stakeholders' proposal with the following limitations.

- Each Adverse Developments Cover can only be applied on one specific group of policies (with the same risk characteristics within the same segment), with a separate attachment and detachment point.
- At inception the attachment point shall not exceed 1.05 times Best Estimate reserves;
- The exit level shall not exceed Best Estimate reserves times (1 + 3 x reserving risk factor).
- The additional reinsurance premium (C) shall not be negative

Therefore the following could be added to Article 117 DR:

117(4): For all segments set out in Annex II, the standard deviation for non-life reserve risk of a particular segment shall be equal to the product of the standard deviation for non-life gross reserve risk of the segment set out in Annex II and the adjustment factor for non-proportional reinsurance.

This adjustment factor shall be calculated as follows

$adjustment\ factor = \frac{(A-(B-C)*D*E)}{A}$ where

A. Impact on basic own funds of reserve risk scenario as defined under the Standard Formula = Nominal best estimate net reserves* x Standard deviation for non-life reserve risk of the segment x 3
B. ADC recovery under reserve risk scenario = The lower of the following:
   - Nominal best estimate net reserves covered by the reinsurance structure x (1 + 3 σ(res,s)) – reinsurance structure attachment point
   - Reinsurance structure cover size
C. Additional reinsurance premium or the equivalent thereof, this premium shall not be negative.
D. Cession to the reinsurer in %
E. Prudency factor is 100%. Bi-annually EIOPA shall evaluate this factor based on experiences in reported data.

* To avoid double counting, the 'nominal best estimate' is the volume measure given in Art. 116(6) and Art. 147(6) of the DR without taking the recoverable of the ADC into account