



Capital or risk, do you really have to choose?

With Solvency II coming into effect in less than a year, PartnerRe offers life insurers an efficient and easy to operate capital management solution: Stop-Loss reinsurance.



Solvency II will come into force on January 1, 2016. On this important date, insurers and reinsurers must be ready to face the many challenges that this mini revolution will bring, including how to assess the right amount of capital to face a specific risk and how to optimize their overall capital position.

Under Solvency II, the Solvency Capital Requirement (SCR) is the key measure with which capital related decisions are made. The aggregate SCR is impacted not only by the calibration of separate risks within a portfolio, but also by the expected future changes in those levels of risks; these potentially significant developments can lead to a high volatility of the SCR between two valuation dates.

Life insurers are already familiar with Stop-Loss as protection for pandemic risk

For many years, life and health insurers have identified pandemics as a peak risk. With the recent outbreaks of avian flu and Ebola, the risk is particularly tangible. To insurers, a pandemic represents a low frequency catastrophic risk with associated high severity in terms of accumulated losses. At the same time, modeling pandemic risk remains highly complex due to the scarcity of events, mobility of populations and improvements in healthcare and sanitation over time.

Stop-Loss is a form of non-proportional reinsurance initially designed to limit the impact on earnings of a steep increase in claims frequency. It is therefore a particularly efficient capital management solution for pandemic risk and any other life risk that could lead to an adverse development in claims ratio and which would tie up a large proportion of available capital.

A straightforward operation

Offering portfolio protection against adverse claims scenarios that are costly in terms of capital, Stop-Loss is easy to operate and can be applied to multiple risk types including mortality, disability income and medical expenses.

Simply put, a Stop-Loss is a commitment from the reinsurer to cover a significant adverse deviation or 'shock' in the claims experience in a given underwriting year. The reinsurer makes a payment if the ratio of claims to premium (the Claims Ratio) exceeds a certain threshold, as specified in the reinsurance treaty. The concept of Stop-Loss is similar to an option which would be 'in the money' when the claims ratio exceeds a given threshold.

When calibrating a Stop-Loss, the first step is to determine the historical average Claims Ratio for the given portfolio. The second step is to determine the level of Claims Ratio at which the reinsurance cover will be triggered; this is called the attachment point (equivalent to the 'floor' of an option in finance). The last step is to determine the level of Claims Ratio at which the reinsurance will cease; this is referred to as the exhaustion point (the 'cap' or 'limit' of an option in finance). The difference between the attachment point and the exhaustion point is the maximum amount payable by the reinsurer.

An appropriately calibrated Stop-Loss enables an insurer to efficiently meet their risk transfer needs, whilst also remaining within the risk appetite of the reinsurer.

From Solvency I to Solvency II

Within the Solvency I framework, insurers mainly used Quota-Share reinsurance, as this was the only solution able to significantly reduce their solvency requirements. The benefit from reinsurance was proportional,

but limited to 50% of the premiums and 15% of the reserves. Nonetheless, it allowed for a straightforward calculation. Under the Solvency II framework, every identified risk is first analyzed independently and then aggregated. For each risk module, the required level of capital is calculated before and after reinsurance, which identifies the benefits of the reinsurance. Importantly, the reinsurance benefits can be deducted from the solvency requirement without any limits, which was not the case under Solvency I.

Solvency II is also a more comprehensive framework than Solvency I as regards risk factors; the life and health insurance SCR calculation not only deals with traditional biometric risks, but also with new risks, such as an adverse deviation in management expenses. Such risks are generally out of the scope of reinsurance programs. Projecting insurers' solvency requirements for their current and future business is therefore significantly more complex, even when opting for the standard SCR formula.

Stop-Loss in action

Let us consider the underwriting risk related to mortality or disability income. A Quota-Share would provide an efficient and easy to implement solution to reduce the related SCR, the consequence of a shock being shared proportionally between the insurer and reinsurer. However, amongst other solutions, Stop-Loss offers the possibility to further reduce the SCR.

PartnerRe offers insurers appropriately calibrated, customized Stop-Loss protection. This reinsurance solution simultaneously limits the risk exposure and reduces the solvency requirement. The saving cost benefit is simple: purchasing 1€ of capacity equates to a saving of 1€ of capital (before allowance for diversification effects).

In a Stop-Loss, the attachment point, which will trigger a payment from the reinsurer, and the corresponding exhaustion point, above which the reinsurance ceases, are chosen in order to optimize the capital above the best estimate liability, whilst remaining within the limits of the Cat SCR. **(Figure 1)**

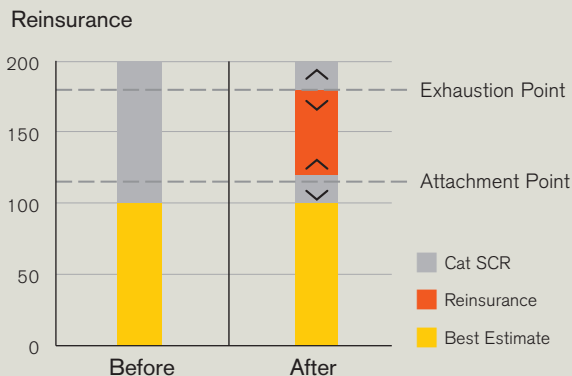


Figure 1: Cat SCR reduction from a Stop-Loss reinsurance. Source: PartnerRe.

As a simple illustration of how Stop-Loss reduces the SCR, we consider here how a mortality Stop-Loss would influence a catastrophic (Cat) SCR under the standard SCR formula calculation. In the example, the portfolio's aggregate expected mortality rate is 1.5‰ and the mortality shock to be applied in the Cat SCR calculation is also 1.5‰. The applied shock leads to a doubling of the portfolio claims rate. To reduce the Cat SCR by the amount of capacity purchased (before aggregation of risks), the Stop-Loss must be calibrated with an attachment point above 100% and an exhaustion point below 200% of the expected claims rate (see **Figure 1**).

Prerequisites

Prior to purchasing a Stop-Loss protection, a number of conditions must be met.

Firstly, the portfolio must be sizeable and sufficiently mature. This will limit sampling errors and adverse deviation for reasons other than a significant increase in claims frequency.

A Stop-Loss also requires a level of sustainability and stability in the insurer's underwriting and reserving policies; the goal of the Stop-Loss is not to finance an increase in reserving resulting from a change in method or insured benefits. Furthermore, a Stop-Loss is well suited to short-term portfolios. Here, the shock for

the Cat SCR runs over a single year, and so its weight in the aggregated SCR is all the more important. Consequently a Stop-Loss offers an attractive solution for institutions involved in writing significant volumes of group life business.

The cost of the Stop-Loss can be compared to the cost of the capital saved, making this both a straightforward and powerful capital management tool. It should, however, not be forgotten that Quota-Share is also an efficient solution to optimize a company's available capital within the Solvency II framework. Whatever the choice of reinsurance solution, all solutions may be calibrated to reduce the volatility in the level of the SCR over a multiyear timeframe; this could help address the ORSA¹ requirement to demonstrate the ability to meet solvency requirements in a prospective way.

PartnerRe: your partner for Solvency II solutions

PartnerRe has developed specific expertise in offering customized and innovative solutions to address clients' evolving solvency needs. For additional information and to discuss potential Solvency II solutions, please contact our team: www.partnerre.com.

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¹ Own Risk and Solvency Assessment (ORSA); a key process requirement under Solvency II.

