



# Optimizing Your Quota-Share

If a reinsurer earns profit on its ceded share, the Quota-share treaty will often specify a profit commission to be paid by the reinsurer to the ceding company. While the impact of this on an insurer's earnings is clear in simple valuation models, such as deterministic scenarios, the situation is more complex under the Solvency II framework. We explore profit commission and the alternative of 'extra commission', using examples to show their respective impacts on insurers' earnings and solvency requirements.



## Profit Commission – returning a share of profit

Life and Health reinsurers frequently offer proportional reinsurance capacity to insurers in tandem with internationally-developed technical expertise to launch new products, such as Guaranteed Minimum Death Benefits and Credit Life insurance<sup>1</sup>. To compensate the reinsurer for its investment, the insurer will cede a fixed percentage (the cession rate) of the risk portfolio to the reinsurer through a Quota-share reinsurance treaty.

Over time, the reinsurer will continue to support the volume increase of the growing portfolio with expertise to reduce claims volatility and other services. However, as the product grows in volume and maturity, the insurer may receive a percentage of the profits from the ceded share to reflect the quality of its underwriting and in-force management; to do this, a profit commission (PC) can be specified in the Quota-share treaty.

Market rates for PC vary and are often not directly comparable as they depend on multiple factors, such as the insurance tariff, underwriting results, embedded margins, portfolio size, maturity of the product, line of business, market and services offered by the reinsurer; for example, the reinsurer may be directly involved in medical or

scheme underwriting, claims management and actuarial services (e.g. pricing support, in-force management and benchmark development).

## Reinsurance commission – returning a share of premium

The purpose of reinsurance commission<sup>2</sup> (RC) is to reimburse the insurer for ongoing acquisition costs and administration expenses. It is often an agreed, fixed percentage of the insurer's premium, but may also be calculated on a sliding scale inversely linked to loss ratio and with a specified maximum and minimum percentage.

If the margins are sufficient, an alternative mechanism to PC is to set the RC high, at a level where it exceeds the insurer's expenses. This is referred to as 'extra commission'.

PC and RC can co-exist in a treaty, but the rates will be negatively correlated; the higher the PC rate, the lower the RC rate offered by the reinsurer (**figure 1**).



**Figure 1:** Variation in the Reinsurance Commission (RC) rate offered by a reinsurer for an example group life treaty as a function of the Profit Commission (PC) rate, taking into consideration the reinsurer's best estimate analysis of the risk and its profitability target. Source: PartnerRe.

<sup>1</sup> In addition to traditional rating factors, best estimates in Credit Life insurance now also embed factors that consider the quality of medical underwriting and claims management.  
<sup>2</sup> Also sometimes referred to as 'ceding commission'.

**Profit commission has a direct and clear impact on an insurer's earnings**

All else being equal, implementing a PC and/or increasing it directly benefits the earnings of the insurer. As a result, PC is an excellent means with which to increase an insurer's own funds/capital, as illustrated in **figure 2**.

**But increases earnings' volatility**

Given that the PC is a function of the earnings of the ceded share, the earnings of the insurance company after reinsurance are a function of the earnings of both the retained and ceded shares. For the same tariff, the implementation of PC therefore increases the variability of the insurer's earnings.

Consider, for example, a 50% Quota-share reinsurance with a 100% PC<sup>3</sup>. A 1% increase in claims ratio leads to a 2% increase in the ceded earnings of the insurer. This translates into a sagging of the earnings distribution (**figure 3**). The graph shows that the expected earnings and earnings volatility both increase with the rate of PC (distribution skewed to the right).

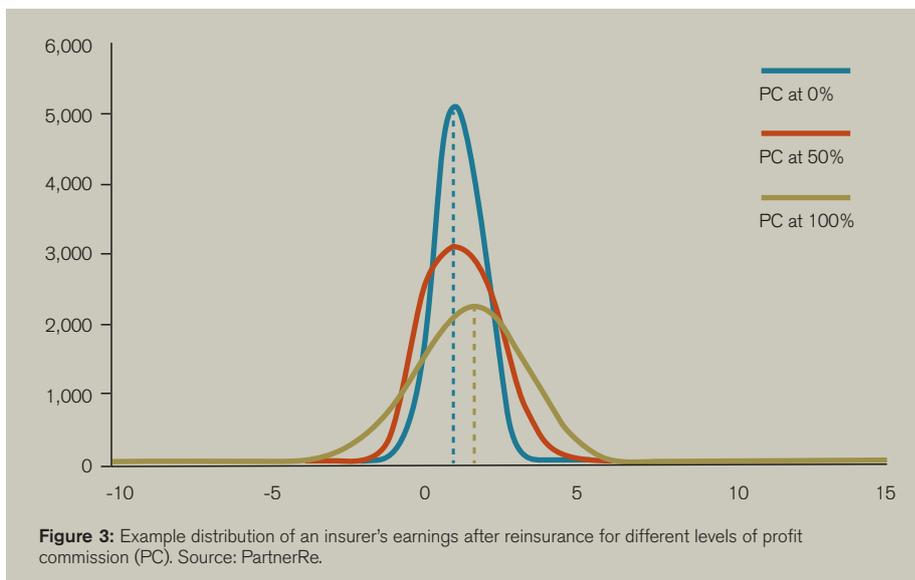
**Alternative to profit commission**

To avoid the earnings' volatility associated with PC, a Quota-share reinsurance with 'extra commission' can be an efficient alternative for insurance products where significant profit margins are embedded in the tariff, as with this the reinsurer guarantees that the insurer's earning on the ceded share equal the extra-commission.

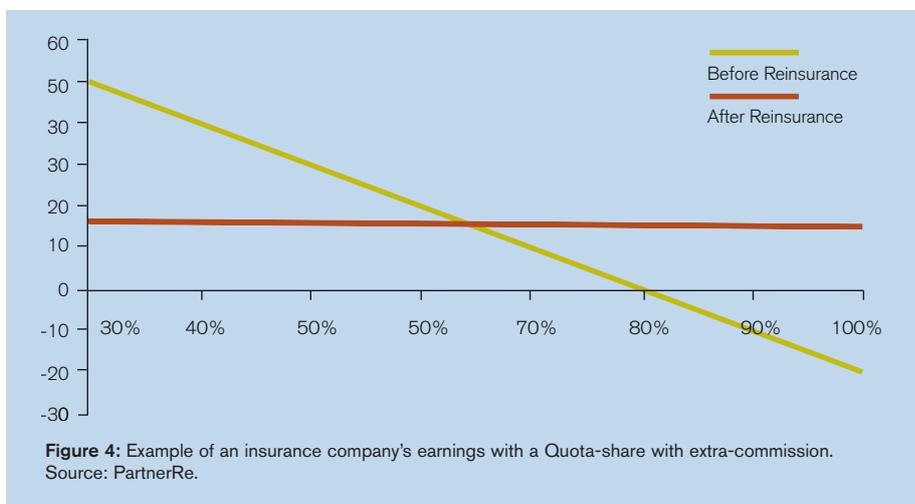
To show the effect, we consider a basic example – **figure 4** – where the gross premium of an insurer is EUR 100, the expenses are EUR 20 and the claims best estimate is EUR 60. For simplicity, let us also assume that the insurer cedes 100% of the portfolio to the reinsurer. If the reinsurer offers a RC of EUR 35, then the insurer will earn EUR 15, even in the case of an extreme deviation in claims.



**Figure 2:** Evolution of an insurer's earnings for an example group life portfolio, net of Quota-share, as a function of profit commission (PC) rate. In this example the reinsurance premium has been adjusted (by the reinsurer) depending on the PC rate. A full analysis of the impact of the PC on an insurer's earnings must however take into account other elements that contribute to earnings, such as the RC rate and reinsurance expenses. Source: PartnerRe.



**Figure 3:** Example distribution of an insurer's earnings after reinsurance for different levels of profit commission (PC). Source: PartnerRe.



**Figure 4:** Example of an insurance company's earnings with a Quota-share with extra-commission. Source: PartnerRe.

<sup>3</sup> A PC rate of 100% is equivalent to an unlimited Stop-loss reinsurance on the ceded share, the premium of which is equal to the reinsurance loading considered in the PC calculation. See 'Capital or Risk, do you Really Have to Choose?' (PartnerRe 2015).  
<sup>4</sup> Solvency Capital Requirement (SCR).  
<sup>5</sup> Own Risk and Solvency Assessment (ORSA).

### Impact within the Solvency II environment

Under Solvency II, the impact of a reinsurance program can be measured through the SCR<sup>4</sup>, which highlights the reduction in the solvency requirement. This analysis, however, must include a holistic view of risks, as required by the ORSA<sup>5</sup>, detailing the reinsurance program and its impact on specific risk metrics and indicators as chosen by the insurer.

The solvency ratio is a critical risk metric for many insurers. The effect of a Quota-share reinsurance on this ratio varies according to the features of the reinsurance.

A Quota-share with RC will reduce the mortality, morbidity and CAT SCR in the same proportion as the reinsurance cession rate.

However, as previously shown, the implementation of PC increases the earnings volatility of the insurer, which is thus more sensitive to a shock scenario. As a result, the Life SCR using the 'standard formula', resulting from the aggregation of the risk modules, is higher with a PC than without and is a growing function of the PC rate. The impact of PC on the SCR is therefore, and in contrast to RC, not proportional to the share ceded to the reinsurer and its effect is more complex to anticipate.

In addition, as illustrated in **figure 5**, the increase in the Solvency II SCR requirement resulting from the additional earnings volatility associated with the PC is not balanced out by the increase in the insurer's earnings from the PC. In our example, the solvency ratio after reinsurance with a PC decreases as the PC ratio increases. However, it stays above the solvency ratio before reinsurance, illustrating the fact that the insurer remains protected in the event of an extreme adverse deviation.

The full impact of a proportional reinsurance on the SCR and the solvency ratio of the insurer will also depend on many other factors, such as the volatility of the reinsured portfolio, whether or not the PC embeds a loss carried forward and other external factors, such as whether the insurer and the reinsurer use an internal model or the standard formula for their capital calculation.

### Selecting between profit commission and extra-commission

PC will often be the only option and is also usually the preferred choice of the insurer as it increases the expected earnings on the ceded share. However, if the portfolio is sizeable/mature enough and has adequate margins, quota-share with an extra-commission can be an efficient tool

for maintaining stable earnings. Simpler in terms of Solvency II impacts, extra commission is also particularly effective in addressing the issue of shocks, such as pandemics or any other event which could damage the financial position of the insurer, so it can also be a good choice for portfolios that are the main drivers of an insurer's earnings as an adverse deviation in these earnings could be detrimental to the insurer due to a lack of diversification benefit. For example, in the current low interest rate environment the margins on Life insurance products (saving products) are eroding and risk products such as Credit Life insurance are becoming the main contributors to profit. Protecting such profits as much as possible is crucial to avoid the situation that no line of business generates significant returns.

### PartnerRe: Your partner for Solvency II solutions

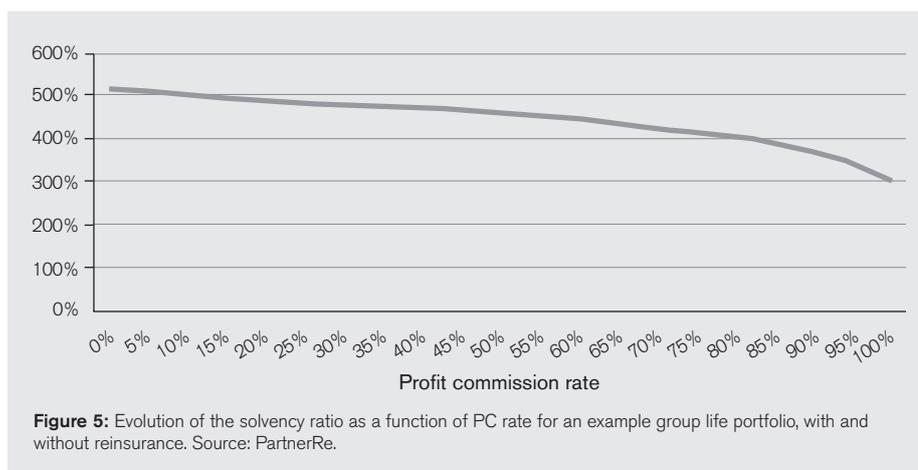
With Solvency II's focus on holistic, high-quality risk management, a long-term reinsurance program is a particularly valuable mechanism to manage risk and reinforce sustainability; reinsurance solutions that include continuity and stability over the long term are therefore an important consideration when choosing a reinsurance partner and structure.

PartnerRe has developed comprehensive expertise in offering customized and innovative risk and capital solutions to address clients' evolving capital optimization and solvency needs. We offer our clients a partnership approach that delivers support across all lines of business, new product development skills, stability and continuity as their businesses evolve.

For additional information about our risk services and to contact us, please go to: [www.partnerre.com/risk-solutions](http://www.partnerre.com/risk-solutions).

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**Figure 5:** Evolution of the solvency ratio as a function of PC rate for an example group life portfolio, with and without reinsurance. Source: PartnerRe.

