THE STRATEGIC REINSURANCE PROGRAM (SRP)

by

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Abstract

The paper describes characteristics, properties and advantages of a Strategic Reinsurance Program (SRP) and illustrates in a numerical example the functioning of a simple and very practical SRP. The unconventional, prefinancing features of an SRP and their significance are pointed out.

Keywords: Cumulative result, standard premium, loss experience discount, basic premium adjustment, intermediate and final result adjustments, de jure and de facto ownership.

INTRODUCTION

An *unconventional reinsurance cover* can be marked by the fact that aside from conventional reinsurance risk elements it contains *de facto self insurance characteristica.*

We can distinguish between two unconventional reinsurance covers: Prefinancing and postfinancing reinsurance covers. A pre-, respectively, postfinancing which is built into an unconventional reinsurance cover refers, of course, to the cover's self insurance part.

We shall refer later to the self insurance part of an unconventional reinsurance cover as to the unconventional part of a strategic reinsurance program.

A prefinancing reinsurance cover is an unconventional reinsurance cover which is constructed according to the ceding company's wish to *build up - in the long run and with high probability - a large amount of money as a cumulative result. The cumulative result has numerous qualities of a fund* and *may serve the ceding company as a strategic tool.* A prefinancing reinsurance cover is appropriate to insurance companies in profitable times which allow them to think far ahead how to optimize their profits according to their business strategy.

An insurance company that wishes or even needs a postfinancing reinsurance cover is usually in an opposite position. It does not invest - with high probability - special premiums into a cumulative result by unconventional reinsurance but *rather looks for release of money on a short-term basis by means of an unconventional reinsurance contract.* The money that is set free at present by the reinsurer is paid back by the ceding company - with high probability - in the years to come. A scheme that fullfills such wishes of a ceding company by means of reinsurance is a *postfinancing reinsurance cover.* A postfinancing reinsurance scheme is close to a banking-loan activity whereas a prefinancing reinsurance scheme has features of a savings-bank activity. It is easier to design a prefinancing scheme than a postfinancing scheme as an unconventional reinsurance cover that is acceptable as a reinsurance cover to the state's supervising authorities.

The *strategic reinsurance program (SRP)* is a very far-reaching prefinancing reinsurance scheme which describes extensively the qualities of a general prefinancing reinsurance cover including the main properties of many specific prefinancing reinsurance models. We shall concentrate in this paper on the main properties of an SRP.

AN SRP-FLOW CHART

The cumulative result, CR, is the center of any strategic reinsurance program. It is usually positive but can also be negative. It is like a "cash-box" into which flow standard premiums, SPs, and interest amounts called loss experience discounts, LEDs, in case there is money in the "box", i.e., in case the CR is positive (not taking here into account claims reserves that can exceed the amount in the "cash box"). Out of this "cash-box" flow loss payments, profit commissions, PCs, intermediate result adjustments, IRAs, and and a final result adjustment, FRA, upon cancellation, in case the "box" is full of money.

In case of bad loss experience - when all money has flown out of the cumulative result -the CR is negative and the rest of the losses are paid by the reinsurer. The main activity of the SRP is then transferred to its rather conventional reinsurance part.

Unconventional elements of an SRP - scheme in case that the reinsurer is paying money "out of his pocket" are a certain compensation of interest losses through basic premium adjustment, BPA, - payments and possibly a certain compensation of the reinsurer's losses in case of cancellation by the payment of a final result adjustment, FRA, in favour of the reinsurer.

In case of no cancellation and a negative CR the reinsurer gets every cover period on top of the basic premium, BP, a BPA, that, like the BP, does not flow into the CR and either an increased SP or additional premium, AP, flows together with the SP, into the negative CR in order to accelerate the situation where the CR becomes positive and the unconventional SRP - part becomes dominant again.

Notations:

k (k=1,2,3,...,n): Index of the cover period (usually one year) of SRP, where k=1 notes the first and k=n the last period of cover

BP(k): Basic premium at the beginning of cover period k

BPA(k): Basic premium adjustment at the beginning of cover period k

SP(k): Standard premium at the beginning of cover period k

AP(k): Additional premium at the beginning of cover period k

PC(k): Profit commission at the beginning of cover period k

LP((k+1)-0): Loss payments at the end of cover period k

LED((k+1)-0): Loss experience discount at the end of cover period k

IRA((k+1)-0)): Intermediate result adjustment at the end of cover period k

CR(k): Cumulative result at the beginning of cover period k

CR((k+1)-0): Cumulative result at the end of cover period k

CLR(k), CLR((k+1)-0): Claims reserves at the beginning, respectively, at the end of
cover period k

FRA((n+1)-o)): Final result adjustment at the end of cover period n

These quantities and payments are registered here for reasons of simplicity either at the
beginning or the end of cover period k. However, we do not exclude payments during
the respective cover period.
Moreover, BPA(1), BPA(2) and AP(1) are equal to zero. BPA(k+1)>0 if CR(k)<0 for
k>1 and AP(k+1)>0 if CR(k+1)-0)<0 for k=1,2,... Otherwise are BPA(k+1) and
AP(k+1) equal to zero.
PC(1)= 0 and PC(k+1) and IRA((k+1)-0) are usually equal to zero for k=1,2,... as long
as the loss experience is not extremely good, i.e. as long as the CR((k+1)-0) does not
become very large.
LP((k+1)-0) is positive in case of loss payments and otherwise equal to zero. Usually
LP(k) is also paid during period k. LED((k+1)-0)>0 if CR(k)>0 and otherwise equal to
zero.

<u>Some short explanations:</u>

The basic premium, BP, is a reinsurance premium for the reinsurer's conventional risks inside the SRP-scheme, for any other "traditional" risks that are added "artificially" to the strategic reinsurance program and for all kinds of reinsurance services that are automatically connected to an SRP. As opposed to the other elements of an SRP BP(k) always belongs to the SRP's conventional part.

The basic premium adjustment, BPA, is a partial compensation for the reinsurer's "investment losses" in case the cumulative result at the beginning of the previous period of coverage becomes negative. The BPA can but must not be included in an SRP-s. BA and BPA do not flow into CR.

The standard premium, SP, is the reinsurance premium that is paid to the reinsurer but flows into the CR which is registered in the reinsurer's books as a reserve.
In case that the CR is negative, it is "advanced" by the reinsurer and the SP flows like the BP and the BPA together with an additional premium, AP - if it is assigned for by the the SRP-scheme - directly into the "reinsurer's pocket". In other words, for a negative CR the SP and the AP reduce the "reinsurer's advanced amount".

In case that the CR is positive, loss payments, LP, of claims that are directly connected with the pure SRP-scheme are made out of the CR and they are reduced by the end of the respective cover period by a large part of the investment income on the CR that we noted as a loss experience discount, LED. If   the CR is negative, loss payments are "advanced" by the reinsurer and they increase the absolute amount of the negative CR.

In case that the CR is positive and large and approaches the climax amount that is implictly or explicitly provided for in the SRP - treaty the SP can be reduced at the beginning of the following cover year by a profit commission, PC, and an intermediate reinsurance adjustment, IRA, can be poured out of the CR, back to the ceding company, at the end of the respective cover period. IRA payments are not reinsured loss payments. Of course, instead of the PC and/or the IRA an unconventional cover extension can, for example, be agreed upon. The IRA itself and the possible cover

extensions instead of the PC and the IRA hint at the enormous flexibility of strategic reinsurance covers.

Remark: As we shall illustrate later in an example the SRP - scheme can include the SP as a function of the CR, which is decreasing with increasing CR and vice versa. In such a scheme an AP and a PC may be implicitly included and therefore explicitly not necessary

The final result adjustment, FRA, we shall describe more extensively in the next chapter since it is substantial for any SRP.

An SRP - scheme is often built up, usually at the ceding comapny's request, as a stop loss cover that does not take into account claims reserves, CLR. For reasons of universality we just mention here the possibility of taking CLR into account as an integrated part of the CR.

A positive amount of money in the CR may be surpassed by the CLR. In such a situation an LED still flows into the CR. The CR that is reduced by the CLR is then negative - as a warning light - and an AP - but not a BPA - starts to being paid.. Claims reserves that reduce the CR reduce, therefore, the probabilility of the reinsurer "advancing" money.

As opposed to this positive aspect of taking CLR into account we want to mention that CLR make an SRP - scheme more complicated. If claims reserves are included in CRs, they are included in the reinsurer's total SRP - reserves and reduce his flexibility to grant additional SRPs, since part of his overall capacity to book reserves for unconventional reinsurance schemes is then "wasted" by the SRP - claims reserves. These reflections actually recommend stop loss reinsurance covers as proper to SRP - schemes, not only from the ceding company's but also from the reinsurer's point of view.

We did neither take into consideration claims reserves in our short explanations of SRP - elements above, nor shall we take into account claims reserves in our further reflections.

One of the main SRP - characteristics is its cumulative character in time. The beginning of a new cover period is not a new starting point but rather a continuation in the running of the whole scheme in which we register certain money movements. The SRP - quantities at the beginning of a new cover period   are a result of their positions by the end of the last cover period and of "corrections" that are made by payments that are due by the beginning of the new cover period. An SRP - scheme is planned and is running in an accumulative manner from its beginning to its termination.

The date of cancellation is usually not fixed from the beginning in order to allow the SRP - treaty to run as long as it is usefull for both treaty partners, the ceding company and the reinsurer. However, the terms of cancellation must be fixed from the beginning and they are fixed by the *final result adjustment,* FRA. The FRA provides for a return of a large part of the CR to the ceding company if the CR is positive and possibly also if it is negative. In the latter case money flows from the ceding company to the reinsurer. In case that the CR is positive the money kept in the CR as a reserve of the reinsurer belongs *de jure* to the reinsurer but *de facto* to the ceding company. Upon cancellation the large part of the CR that is transferred to the ceding company is converted into *de facto ownership* of the ceding company and the small part of the CR that remains with the reinsurer is transformed from *a de jure ownership* into a *de facto ownership.* In case that the CR is negative on the date of termination and the FRA provides for a return of part of the CR, that part is the "returned part"of the amount "advanced" by the reinsurer to the ceding company. The *de jure loss* of the reinsurance company is converted into a reduced   *de facto loss.* We can now understand why we chose as a special characterisation of an SRP for a negative CR, at least for the unconventional part of the reinsurer's losses, the expression "an advanced amount". Finally the FRA may include a punishment for the party that is cancelling the SRP - treaty. When starting the SRP both parties are often interested in a long term treaty and a long term mutual connection and a penalty for terminating the treaty makes a cancellation less attractive and is therefore a mean to provide security for the treaty's longevity. In case that the FRA includes such penalties and the CR is positive, the FRA is reduced upon cancellation if the ceding company is the terminating party and

increased in case that the reinsurer is the terminating party and vice versa in case that the CR is negative upon cancellation.

If the SRP - scheme includes claims reserves in the CR they are deleted from the CR and the reinsurer's liabilities on them are obliterated upon cancellation of the SRP - treaty and they are not taken into account in the FRA.

Remark:

Instead of saying that the reinsurer pays reinsurance losses when the CR is negative it is more correct to say, while the SRP is running, that he "puts money forward for loss payments at unfavourable conditions" because of no or only partial compensation of interest losses by the BPA, respectively, upon termination, that he "has partially paid reinsured losses and has partially advanced money for loss payments at unfavourable conditions".

Remark:

An SRP includes a small but not negligible risk element for the reinsurer that is often overlooked, namely, that the SRP is abruptly broken off while the CR is negative because the ceding company becomes insolvent. In such a case we can, of course, neither speak of putting money forward, nor of advancing money. Usually insolvency of a large ceding company and a CR being negative in an SRP - cover for the same ceding company are nearly independent events. Since each of the probabilities of insolvency as well as of a negative CR is small, the smaller is a product of these probabilities, i.e. that insolvency occurs, while the CR is negative.

EXAMPLE OF AN SRP - SCHEME

Let us assume that the SRP is basing on a stop loss reinsurance cover, that no claims reserves CLR are needed, that the treaty partners have agreed upon a target limit PL (positive limit) for the CR that should not be surpassed and that the reinsurer's SRP-cover limit is NL (negative CR - limit), i.e. NL is the maximum amount that can be "advanced" by the reinsurer to the ceding company. Whatever amount is covered in the SP beyond NL has to be paid conventionally by the reinsurer (without BPA, AP or FRA in case of cacellation). We can also say that NL is the absolute amount of the maximum possible negative level of the CR.

Let us assume moreover that

BP(k)=BP k=1,2,3... is constant and that

the interest rate for the calculation of BPA and LED is i=5%=0,05 for every SRP -
cover year

AP, PC and IRA are not existing in our simple example, since they are actually not necessary there.

We can now describe the SRP - scheme of this example in the following way:

(1)   SP(k)=(PL-CR((k)-0))/m, where k=1,2,3... , CR((1)-0)=0 and m=5

(2) $BPA(k)= \begin{cases} 0 & \text{for } CR>0 \\ \\ 0,7\,i \, \big| CR(k) \big| & \text{for } CR<0 \end{cases}$

(3) $LED(k)= \begin{cases} 0,8\,i\,CR(k) & \text{for } CR>0 \\ \\ 0 & \text{for } CR<0 \end{cases}$

and in case of the SRP's cancellation

(4) $FRA(k)= \begin{cases} 0,9\,CR \text{ for } CR>0, \text{ if the reinsurer cancels the SRP} \\ \\ 0,7\,CR \text{ for } CR>0, \text{ if the ceding company cancels the SRP} \\ \\ 0,8\,CR \text{ for } CR<0, \text{ if the ceding company cancels the SRP} \\ \\ 0,6\,CR \text{ for } CR<0, \text{ if the reinsurer cancels the SRP} \end{cases}$

The simple formula (1) is most important and desribes most of the specific SRP - features of this example while the SRP is running. The standard premium at the beginning of a cover period is equal to 1/5, i.e. to 20% of the difference between the target limit and the actual limit of the cumulative result at the end of the preceding cover period. The larger the CR is the smaller is the difference to the target limit and the smaller becomes the SP. We can interpret such a reduced SP as compared to the first SP - payment, respectively, as compared to the SP - payment of the previous cover period as an implicit deduction of a profit commission, PC, from the first SP's payment, respectively, as a PC's increase as compared to the PC of the previous cover period.

On the other hand - if the CR becomes negative - the difference to the target limit, LP, increases in comparison to the starting point of the SRP, when CR is equal to zero, by the absolute amount of the negative level of the CR at the end of the previous period of cover. Therefore the SP *increases* by 20% of the absolute amount of the negative level of the CR as compared to the first SP - payment and this increase can be interpreted as an additional premium of 20% of the absolute amount of the negative CR's level which is "automatically" integrated in the SRP - scheme.

Formula (1) thus fulfills two important SRP - characteristics: Its SP decreases when the CR increases and vice versa, irrespective, whether the CR is positive or negative.

The SP - behaviour according to formula (1) cancels, *when the CR is positive, the necessity of introducing a profit commission* and the SP - behaviour, *when the CR is negative, deletes the requirement of introducing an additional premium.*

Let us assume that i=0,05 (=5%), PL=1000, NL=500, BP=10 that LP are the loss payments and that the SRP is terminated due to the reinsurer's cancellation by the end of the 10th year of coverage. The interest rate for the calculation of BPA, if the CR<0, is 70% of 5%, i.e. 3,5% and for the calculation of LED, if the CR>0, is 80% of 5%, i.e. 4%:

k	BP	BPA	CR((k)-0)	PL-CR	SP	CR(k)	LED	LP	FRA
1	10	0	0	1000	200	200	8	0	
2	10	0	208	792	158	366	15	0	
3	10	0	381	619	124	505	20	800	
4	10	1	-275	1275	255	- 20	0	600	
5	10	7	-500	1500	300	- 200	0	0	
6	10	0	-200	1200	240	40	2	0	
7	10	0	42	958	192	234	9	0	
8	10	0	243	757	151	394	16	0	
9	10	0	410	590	118	528	21	0	
10	10	0	549	451	90	639	26	0	
			665						598

THE PREFINANCING CHARACTER AND ADVANTAGES OF AN SRP

As we have already mentioned in the introduction it is easier to construct an unconventional reinsurance treaty of prefinancing character than of postfinancing character that is acceptable to the supervising authorities as a reinsurance treaty. This is a fact of great importance since the reinsurance company as well as the ceding company are not allowed to sign a treaty that is not of reinsurance character and unacceptable to the supervising authorities. Moreover many of the (re)insurance advantages like the fact that premiums can be deducted from profits get then lost for the ceding company, respectively, for an industrial company that is interested to be covered unconventionally by an insurance company.

The most common and reasonable unconventional reinsurance form of prefinancing character is the the Strategic Reinsurance Program (SRP) that is known in the market also as a Self Insured Reinsurance (SIR - cover). The expression "Self Insured Reinsurance" actually relates only to the pure unconventional part of an SRP and may be misleading.

Due to the ceding company's business position and its intentions, when signing an SRP, the SRP's prefinancing character must be obvious. The ceding company *expects*

in such a case globally, and specifically in the branches to be covered by the SRP, *profits.* The conventional premium for the same cover should be much larger than the basic premium, BP, but much smaller than the standard premium, SP, in the first year of an   SRP - coverage, a fact that is easily explicable in a conventional reinsurance manner as we shall point out for the SP in the next chapter.

In case of the BP the fact are obvious:

Since the conventional reinsurance risk within an SRP is much lower than the conventional reinsurance risk would have been for the total cover, the BP must be much lower than the conventional reinsurance premium for the same reinsurance cover. With high probability the ceding company expects part of the premium to get "lost" in a conventional reinsurance treaty. An intentional underreinsurance may lead, unexpectedly, to unpleasant losses. In case of the expected   good results a conventional reinsurance would increase the ceding company's taxable profits considerably more than a corresponding SRP, a fact that is also undesirable.

The ceding company's wishes may be fulfilled, if it can pay higher premiums for the branches that are covered by an SRP and accepted as reinsurance premiums by the supervising and other authorities. These high reinsurance premiums reduce, of course, the probability of negative reinsurance results considerably. *This means that the requested reinsurance treaty gets a prefinancing character.*

Of course, the insurance company is not only interested in paying high reinsurance premiums but by using them, at least partly, when necessary, in worse times, or even, if possible, in times of profit for other strategic purposes that are not necessarily connected merely with reinsurance (e.g. by means of the IRA of an SRP).

The ceding company gets regularly interest rates, that are fixed in the SRP – agreement, on the respective (positive) CR - levels, i.e. on the accumulated SPs and LEDs in excess of the accumulated loss payments. Consequently it has the very *attractive advantage of getting not only interest rates but also compound interest rates on the self-insurance-part's SRP - profits..*

Since all the accumulated amounts, including compound interests, that are set aside for the ceding company in the "cumulative result", CR, are initially used for claims payments, the   probability of an accumulated negative result is more and more

shrinking for a fixed reinsurance cover, the more the CR is increasing in the course of time. *This fact underlines once more the prefinancing character of an SRP.*

As we have illustrated in the example the SP is the more decreasing, the more the CR is increasing, since the CR should not exceed a certain amount that is fixed in the SRP - structure. As we shall explain in detail in the next chapter the CR - level is illustrating the time-cumulative claims experience in a conventional manner.

The ceding company may wish to cover risks that are usually conventionally excluded in the covered branches. Finally, the ceding company may look for a multiannual treaty that does not fix a priori the time of the total cover period and allows it to withdraw from the reinsurance treaty, for example, once a year, whenever it wishes.

All these wishes of the ceding company may be fulfilled by an SRP!

In case that the CR becomes negative the existence of an additional premium, respectively, an SP - increase that is built into the SRP - like in our - also underline the *SRP's prefinancing character.*

With increasing CR there may be a lot of reasons for the ceding company, and even more for the reinsurer, to reduce the "standard premium", i.e. the part of the annual reinsurance premium that is put aside for the ceding company. This means that the CR may increase - the more so, since the interest amount that is attributed to a large CR is relatively high - but at the same time the SP decrease, that the *probability of the total accumulated result of the SRP becoming negative is decreasing, the probability of the annual result becoming negative, however, increasing* because of the reduced annual reinsurance premium due to good reinsurance results in the preceding years.

This reflection underlines once more the SRP's prefinancing character despite reduced standard premiums due to an increasing CR.

As already mentioned, the supervising authorities observe annual results and not results accumulated in time and therefore it is then just to reduce the total annual reinsurance premium due to good loss experience - and the resulting increasing CR - and the conventional reinsurance behaviour of an SRP becomes more and more easily explicable to them. This SRP - behaviour is certainly advantageous both for the reinsurer and the ceding company.

We shall analyze now the conventional behaviour of an SRP more in detail:

We shall examine now whether the SP - reactions on different claims developments within an SRP - scheme are coherent with the reactions of conventional reinsurance premium payments on the respective developments of claims. We shall also explain the "conventional justification" of the initially relatively high SP - payment(s).

In our reflections on the "unconventional" SRP - behaviour compared to the behaviour of the respective conventional reinsurance covers we do not need to take into account the BP - payments which are the relatively small conventional part of reinsurance premium payments within an SRP - scheme that also include the payments of the ceding company for all kinds of SRP - and other reinsurance services.

What does a positive CR and what does a negative CR signify?

Let us assume that an SRP - agreement starts to operate at time 0. The respective CR - level at time T characterizes the claims experience of the SRP - agreement accumulated all over the time from its beginning up to time T. This claims experience takes into account interest amounts - which we called loss experience discounts, LED - that are attributed to the "specific reinsurance fund", CR, in favour of the ceding company.

LED is positive as long as the CR is positive, not taking into account possible claims reserves. The CR builds up from standard premiums, SPs, and interest attributions LEDs on the respective CR - levels, less loss payments that are paid out of the CR according to the respective SRP - scheme. Therefore, the larger is the CR, the more exceed the SPs and LEDs that are flowing into the CR the loss payments that are flowing out of the CR in the course of time, up to time T, and the better is, corresponding to conventional reinsurance considerations, the SRP's claims experience. The closer the CR - level approaches the CR - upper limit, LP, that may be fixed in the SRP - scheme the better is the claims experience and the more the SP reduces - as we have illustrated in the example - the more, however, the LED increases. The LED may become then far more significant than the SP. These facts have already been mentioned under other perspectives in the last chapter.

In a conventional reinsurance treaty good claims experience in the course of time leads to the ceding company's demands for reductions of reinsurance premiums for the same cover and/or to an introduction, respectively, an increase of an existing profit commission and/or to an expansion of the reinsurance cover - and to the reinsurer's

consent to such demands. Correspondingly premium reductions in unconventional reinsurance covers due to good claims experience, respectively, due to an increasing CR, are already built into the SRP - scheme from the beginning, either directly in the form of reductions of the annual SP or by granting a profit commission, PC, the size of which depends on the CR - level. An increase of the CR may also lead to an expansion of the reinsurance cover within the SRP - scheme including even reinsurance covers that are conventionally not reinsurable.

A special SRP - characteristic is the intermediate result adjustment, IRA. Depending on the SRP - agreement the ceding company may have the right to ask in case of a large CR - size an IRA that reduces the CR and may not be connected specifically to loss payments for claims that are covered by the SRP. An IRA underlines the SRP's great flexibility and may be of great importance to the ceding company. Moreover the IRA can solve a specific SRP - problem: Usually both SRP - treaty partners are interested to fix an upper limit, PL, for CR. If the CR approaches this limit due to an excellent claims experience the LED that constantly grows with the CR may cause the CR to exceed this upper limit even if the SP is reduced to a minimum. The only mean to prevent such a possible development - except for cancelling the SRP, which may be undesirable to both treaty partners - is an application of the IRA in time.

When regarding negative CR - levels, either because the claims reserves exceed the amount of money that is still in the CR or because the reinsurer had already "to forward money", the claims, respectively, even the loss payments up to time T exceed all the SPs and the LEDs up to time T which means bad claims experience. The more negative is the CR, the more exceed the claims all SPs and LEDs up to time T and the worse is the claims experience.

In conventional terms the claims exceeding the SPs would already mean bad claims experience, the more so, if even the loss payments would exceed the SPs (not taking the BPs into account). If the CR becomes, however, negative, then the claims experience, in conventional terms, is even worse, since the claims, respectively, the loss payments up to time T exceed not only the SPs up to time T but in excess of them also the LEDs. In a conventional reinsurance treaty the bad claims experience - that is expressed by a negative CR in an SPR -scheme - would lead, according to the reinsurer's demand, to a reinsurance premium increase and/or a reduction, respectively, a cancellation of existing profit commissions and /or a curtailment of the reinsurance

cover in the next period of reinsurance coverage. Correspondingly, bad claims experience, respectively, a negative CR - level, leads to an SP - increase either directly and/or indirectly, by adding an additional premium, AP, to a cancellation of possibly existing profit commissions, to a cancellation of the LED and to an introduction of a basic premium adjustment, BPA, for the reinsurer that does not flow into the CR (if the reinsurer has already "advanced" money), and finally, possibly, to a curtailment of the reinsurance coverage within the SRP. Such a curtailment would, however, usually not fit into the basic lines of an SRP - scheme. The SRP - increase, respectively the AP as well as the BPA are the larger, the more negative becomes the CR.

We can sum up: There exists a *natural, conventional behaviour of the SRP - structure. The better the claims experience in a time-cumulative manner, i.e. the larger the CR, the smaller is the reinsurance premium, i.e. the SP (plus the constant, respectively, decreasing BP) and vice versa.*

We can observe an interesting fact: In conventional reinsurance results of a reinsurance treaty are observed annually by the treaty partners and, if they are substantial, also by the supervising authorities. When renewing a reinsurance treaty, however, reinsurance premium increases, respectively, reductions are demanded by the reinsurer, respectively, by the ceding company, taking into consideration the claims experience of that treaty over several years, an apprthat corresponds to the direct and/or indirect multiannual influence of the CR - level on the SP in an SRP - agreement.

After having followed the coherence between trends of SP - payments in an SRP - scheme and of conventional reinsurance premium payments according to different claims developments and after having discussed what positive, respectively, negative CR - levels signify, we wish to point out another important conventional reinsurance feature of an SRP:

In the first SRP - cover period(s) both SRP - treaty partners wish to build up a positive CR. Therefore, as we have pointed out in the last chapter, the SP of the first cover period(s) should be much larger than an analogous reinsurance premium for the same cover.

Can such a large SP in the first year of coverage be conventionally justified? This is necessary to justify the SP as a reinsurance premium!

The reinsurer is obliged to return to the ceding company upon termination a very high percentage of his (expected) profits of all times since the beginning of the SRP - treaty as a final, accumulated profit commission that we called final result adjustment, FRA. Due to calculations for conventional reinsurance treaties that are "translated " to an SRP, the reinsurance premium must be the higher, if the reinsurer wishes to keep his expected profit constant,

a) the higher are the expected profit commissions, respectively, the expected SP - reductions while the SRP is running,

b) if IRAs are included in the SRP - scheme,

c) the higher is the upper limit, PL, of the CR that is fixed in the SRP - scheme,

d) the higher is the FRA, if the CR is positive upon termination,

e) the higher is the probability of the CR being positive upon termination,

f) the lower is the limit of the SRP - coverage, i.e. the lower is the upper limit, NL, of the absolute amount of the CR, in case the CR is negative and

g) the lower is the FRA, in case that the CR is negative upon cancellation.

The intentions of a ceding company that is looking for an SRP are decisive for the SRP - structure: These intentions try, as already partly mentioned in the last chapter, to achieve with high probability quickly increasing high CR - levels for all kinds of safety - and strategic purposes and to obtain the introductions of IRAs and possibly of high PCs in the SRP in case of a large CR. Moreover, the ceding company usually intends to keep the CR close to the initially determined upper boundary, PL, of the CR and to attain this boundary as high as possible, to keep the probability of the CR getting negative as low as possible, and, in case it becomes negative, to increase the premium flow into the CR in a way that gets the CR with high probability positive and large again, as soon as possible. Finally the ceding company is certainly looking for an FRA as high as possible, if the CR is positive upon termination and as low as possible, if the CR is negative upon termination.

The reinsurer will try to keep his limit of SRP - coverage as low as possible. Therefore, the upper limit, PL, that may be fixed in the SRP - agreement for the CR, when positive, is usually much higher than the absolute amount of the upper limit, NL, that is marked out when the CR is negative. In an SRP - agreement the reinsurer will usually try to take into account the ceding company's wishes as far as possible, since he is

reducing his reinsurance risk and chooses for his limited "total CR - capacity" for SRP - covers only excellent clients.

All these ceding company's and reinsurer's requirements and reflections lead to an SRP - structure that demands according to the upper conditions a) - g) a very high, conventionally considered, SRP - initial reinsurance premium.

Consequently, the total SRP - initial premium - which is split into a BP and an SP - must be considerably higher, if it is "conventionally" calculated, than the usual conventional reinsurance premium for the same reinsurance cover (without any profit commissions). As we have seen in the last chapter the BP is considerably lower, in conventional terms, than the reinsurance premium for the same cover (without profit commissions). Consequently, not only the total initial SRP - premium but also the *initial SP must be in a "conventional perspective" far larger than the conventional reinsurance premium (without profit commissions) for the same reinsurance cover in the same year.*

Remark:

All the cumulative compound interest income that is accrued to the CR in the course of time in the form of LEDs, is also included in the FRA. I.e., if, for example, no losses where paid until termination and on the date of termination 25% of the CR are built up by LEDs and the profit participation FRA is equal to 80% of the CR, then the profit participation that is calculated on the standard premium income, SP, alone is equal to 80% of (100/75) i.e. to 106,67% of the accumulated SP. We note that *in conventional terms*, even on a cumulative basis, the FRA that is earmarked in the SRP- scheme for profit participation, can easily surmount 100% of the accumulated SP. The fact that investment income on profits is included in the profit participation justifies all the more a very high initial SP.

Another remark:

If we assume that claims are first paid out of the standard premiums and only if they exceed all paid standard premiums out of the LEDs then, upon cancellation, if the CR is positive, it can even happen, that the CR is built up only out of LEDs and, of course, the FRA is paid only out of the LEDs. This assumption is, however, artificial since it is of no importance out of which source we define the losses to be first paid out of the CR.

Another fact has to be taken into account, namely, that the time - cumulative character of an SRP is conventionally unusual and, therefore, supervising authorities may look at the first SRP - year as a separate year at the end of which the scheduled high profit commission FRA should be due. In reality the FRA may be due after one SRP - year if - for whatever unforeseen reasons -   the SRP is already cancelled during the first year of coverage. Such a perspective emphasizes "conventionally" all the more the necessity of a very large SP in the first SRP - year before having any SRP - claims experience.
We want to mention, moreover, that in case that the SRP includes from the beginning reinsurance covers that *are conventionally not reinsurable*, such an *additional cover* is certainly another reason to increase the initial SP.
Final remark:
All our considerations in a "conventional way of thinking" were stochastic, except for termination facts that are connected to the cancellation of the SRP. When describing the FRA we have mentioned that since both SRP - treaty partners are usually looking for a long mutual SRP - connection, they usually include in the SRP - scheme an FRA - penalty for the the SRP - cancelling party. Never-the-less we have to bear in mind that an SRP - agreement - which can be changed all along the time it is running, according to the intentions and wishes of the SRP - agreement partners - can be cancelled just at the moment when the CR becomes negative. Since this is from the beginning opposed to the   intentions of the SRP - agreement partners, we do not attach much importance to this possibility and can adhere to the result of our considerations that the profit participation in an SRP is very influential and dominant compared to the possible effect of   the loss participation that may also be built into the SRP. Therefore our reflections "in a conventional way of thinking" that lead to and explained the necessity of high SP(s) in the first SRP - period(s) of cover are anyway correct.