Properties of a Combined, Unconventional Reinsurance Cover (CRC) Set Up by Conventional Non-proportional Reinsurance-Retrocession Covers

Introduction

In the first part of the paper we shall describe a profit center (PC) system, the reasons why it is set up, its advantages and disadvantages, as well as the main issues that the general management of a large insurance company that has introduced the profit center system has to take care of on an ongoing basis. The properties of a CRC will be described in the first part of the paper by setting up an internal fund for the PCs (the first CRC type), and, by setting up an external fund by XL reinsurance premiums for the PCs (the second CRC type). The CRC types will be compared. In both cases the reinsurance company should be covered by the ceding company by a multi-line stop loss retrocession cover.

In the second part of the paper the second CRC type will be mainly considered and the corresponding reinsurance system for fulfilling the ceding company’s plans and intentions of controlling and monitoring its profit center system will be examined. The CRC’s conventional and unconventional properties and the reasons it has been set up will be given and a comparison made to the better known and more frequently used unconventional Strategic Reinsurance Program (SRP). An SRP and its properties has been described by the author of this paper in the proceedings of the last Astin Colloquium held in Tokyo in the paper “The Strategic Reinsurance Program (SRP)”.

PART I

An important management problem for the general management of a large insurance company that we shall call the principle management problem consists of the question of how to best delegate management responsibilities and how to motivate managers to optimize their work within the limits of their responsibilities.

The Profit Center System (PC System)

A very effective and common strategy adopted by large, multi-line and usually globally active insurance companies for solving the principle management problem is to set up a profit center system.
A multi-line insurance company may be divided into PC insurance branches and even the investment division may be subdivided into different PCs according to criteria established by the company’s strategy. In this paper we shall not deal with investment PCs. A world-wide active insurance company may be divided into different subsidiaries and agencies and relatively large subsidiaries may even be subdivided into PC insurance branches.

The essential difference between a division that deals with a certain insurance branch within the insurance company and a profit center in charge of the same insurance branch consists of the substantially different competences that are delegated to the head of the division and to the manager in charge of the respective PC.

A PC is in many respects a company in charge of specific insurance activities, or of insurance activities in specific countries or geographical areas. The head of such a “company” is the manager in charge of the respective PC and he has to report to the insurance company’s general management rather than to the board of directors to which the general management reports. The competence of the head of a PC is curtailed by the insurance company’s internal strategy which determines when the PC manager has to pass on information and carry over the responsibility for decisions to the general management. “Company – characteristics” of a PC are the facts that its performance is judged annually by the general management – but not by the board of directors or by company shareholders, and that the PC manager has to take far reaching responsibility for the PC’s performance. The restrictions on the competence of the head of a PC have, of course, to be taken into account when the performance of the PC is judged at year’s end.

The main reason for introducing a PC system as a management tool is to stimulate the head of a PC and all his staff to make every effort to get the best possible results within the limits imposed on them due to the additional responsibilities delegated to them. The additional responsibilities that are connected with a PC increase the status and importance of the PC’s staff, makes the daily work of the employees and, of course, of the PC’s manager more interesting and give them more opportunities to demonstrate their capabilities. All these advantages are, however, dependent on the standard of management of the PC.

A PC strategy can be on one hand very successful and fruitful - if it is well managed. However, it is on the other hand quite risky and dangerous and it is therefore most important that the general management of the large insurance company is from the beginning clearly aware of the hazards that are inherent in a PC system and has the knowledge and means to overcome them. Such hazards and the way to handle them will now be described by the principles of a profit center system and by comments on them.

PRINCIPLE I:
The first principle is the principle of fairness. When assessing PCs it is most important to stick to the principle of fairness. By no means should one PC be favored at the cost of another PC, i.e., the successes and positive achievements of one PC should not be credited to another PC. The assessment of the PCs must be technical, with no sentiments towards the head of one PC or another. The effect of a non-technical, not neutral assessment of PCs can be disastrous and lead to a result that is exactly the opposite of what the PC strategy is aiming at – frustration instead of stimulation!

What may the effects of an unfair assessment be on the head of a PC who believes or is even convinced that his positive results have been assessed too lowly and that the
positive difference between the real results and the assessed results have been credited to another PC or to other PCs? He will certainly be disappointed and so may be his staff. He may ask himself why he is working so hardly to achieve excellent results, when they are being credited to other PCs. He may start to look at other PCs that he believes to be favored at his cost as “competitive PCs”. Such a development is certainly most undesirable from the company’s overall point of view. On the one hand – as a result of an unfair assessment of their results - certain PCs may lose any interest in achieving the best possible results “for competitive PCs”, and on the other hand they may indirectly even oppose any coordination with “preferred PCs” in case of multi-line risks that affect “preferred” as well as “disadvantaged” PCs.

It is very important to mention here that the general management of a company that has introduced a PC strategy may try to achieve a neutral and technically correct assessment of the performances of all its PCs and yet fail from a subjective point of view and possibly even from an objective point of view. It is not at all easy to keep the assessments of the performances of all PCs technically correct, i.e., fair. We shall suggest in this paper a fair assessment of the results of PCs, among other things, by means of the combined reinsurance–retrocession coverage CRC. A fair assessment of PC results from a subjective point of view is achieved when all PCs believe they have been correctly assessed. This is even more difficult and important to arrive at than an objectively fair assessment of all PC performances since an objective assessment does not guarantee that certain heads of PCs may not be left with an objectively wrong yet uneasy feeling that they have been placed at a disadvantage. If such managers are given freedom to place, within certain limits, their reinsurance in the CRC, as we shall discuss later, the feeling of having been unfairly assessed may be corrected or even disappear.

PRINCIPLE II:
The second principle is the necessity to transfer considerable competence to the assigned head of a PC when introducing a PC system as a strategic management tool. When a division of a branch is converted into a PC it becomes in many respects de facto a partly independent insurance company and the manager of the former division who may become the head of this “insurance company” has to be trained in new kinds of management tools that he did not need before in order to be able to fulfill his extended scope of functions properly. Moreover, the range of his competence must be extended accordingly.

An important new task for the head of a PC that is connected with the introduction of a PC system and that interests us especially in this paper is to provide security for the fluctuation of results of the PC by means of reinsurance.

The transfer of the necessary competence to the heads of newly introduced PCs is an insurance company’s internal management problem. Principle II can and has, therefore, to be observed by the insurance company internally.

PRINCIPLE III:
Despite the introduction of a PC system a large insurance company must avoid being split into small “insurance companies”, and thus reducing or even giving up a lot of the advantages a large insurance company has for its clients. An advantage of a large insurance company of good reputation for its clients is, for example, the client’s belief to be able to rely on his insurer in every respect, from a correct premium to a correct treatment of claims, including the knowledge that the insured claims will really be paid out in time without any difficulties and troubles.
large company can, for example, be insured by a single large insurance company in a multi-line reinsurance contract and can be given the large cover capacity that it needs by this insurance company. Such advantages are very comforting for all kinds of clients and a large insurance company must keep these advantages in mind when introducing an internal and/or external strategy. How can a large insurance company introduce the strategy of a profit center system and yet keep all the advantages of a large insurance company for its clients?

Two types of combined unconventional reinsurance covers (CRC) not only solve this most important problem and thus enable the introduction of a PC strategy but fortunately enough also make adherence to the principle of fairness (Principle I) possible. When the general management of a large insurance company provides the necessary training and competence for the managers of newly introduced PCs to fulfill the demands of Principle II, then a CRC that is correctly adapted to the wishes and intentions of the insurance company gives an answer to the other problems that we have mentioned here which in connection with Principles I & III.

The problems that are described in Principle II can be and are usually solved internally, whereas those of Principles I and III can be met externally by an individually adapted CRC.

THE TWO CRC - TYPES

The two CRC types that we are going to describe provide answers for the principle of fairness and for the question of how to prevent the split of a large insurance company into relatively small, restricted units despite the setting up of a profit center system. The first CRC type is mainly characterized by a combination of conventional, usually excess of loss reinsurance covers of an internal fund to the large insurance company’s PCs, a fund that is best covered externally by a multi-line stop loss cover given by a large reinsurance company and a specific stop loss retrocession cover given by the ceding company to the reinsurance company.

In the second CRC type the ceding company’s PCs are directly covered by excess of loss reinsurance covers that should all be granted by an external fund that is set up by the same large reinsurance company in favor of the large ceding company. All these covers should be given a specific, multi-line stop loss retrocession cover by the ceding company.

Positive XL reinsurance results and interest rates on them are used de facto to build up the fund internally in the first CRC - type, and, externally, in favor of the ceding company in the second CRC type. The ceding company helps to protect the internal or external fund and its own interests in the first case indirectly and in the second case directly by a multi-line stop loss cover on the fund. Of course, the fund is the main unconventional element in a CRC.

We shall describe a CRC more in detail later. Here we have just mentioned its main characteristics in order to be able to describe the two types of CRC that we now introduce and how they solve the problems presented by Principles I & III.

THE FIRST CRC TYPE: THE GLOBALLY REINSURING CRC

The first CRC type is needed when the large insurance company decides on a PC strategy in which a cash-box that we shall call a fund is built up internally. This internal fund provides reinsurance covers for the PCs. The internal reinsurance premiums that flow into the fund build it up. The manager who is in charge of the internal fund takes on a lot of responsibilities and has to acquire enough competence,
accordingly. He has to negotiate annually the kind and extent of reinsurance cover for each PC and the premium rate that flows into the fund with the respective head of the PC.

Small insurance companies need relatively extensive reinsurance covers that increase their gross capacity substantially in order to remain competitive in the insurance market. In the same way, the internal reinsurance fund of the large insurance company must yield to each of its PCs a more or less "extensive internal reinsurance coverage", at least for the difference in capacity of the large company to the respective PC in the respective line of business. Moreover, the manager of the internal fund needs additional premiums from the PCs and additional capacity for the accumulation of risks that are covered by several PCs.

When the internal fund of a large company can grant to each of its PCs the parent company's capacity for the respective PC's line of business taking even the additional capacity for the accumulation of risks into account, it fulfills the requirement of Principle III and actually prevents the split of the large company into small "PC companies"!

This target can be arrived at by increasing the internal fund rapidly to a considerable level by way of relatively large PC premiums and by protecting it by a global external, multi-line stop loss reinsurance cover that should be protected by a retrocession cover from the large ceding company.

When a PC strategy – which includes an internal fund – is introduced, the fund's manager needs additional premiums to build up the fund. These are implicitly built into the relatively large initial PC premiums. Technically the relative large initial PC premiums for the covers of the fund may be explained on the one hand as a result of little claims experience in the beginning, and on the other hand due to an option of substantial premium reductions in case of positive claims experience.

The fund manager's internal negotiations with the heads of the PCs will certainly not be easy, since the latter will fight for extensive reinsurance covers for as low premium rates as possible in order to present good net results by year's end. It will not be easy to persuade them to pay premiums for their PC's part in cumulative risks and to determine correctly their respective part in cumulative risks. It may be even more difficult to persuade them to contribute in the beginning to the building up of the internal fund. Here the assistance of the general management may be necessary to promise to take such difficulties, especially immediately after the introduction of a PC system, into account when assessing the performance of the PCs by year's end. The annual negotiations of the fund's manager with all the PC managers on all details and all their reinsurance requirements, if possible, with no pressure from the general management, should finally lead to reinsurance arrangements that satisfy all participants and thus fulfill the requirement of the first principle for fairness.

The setting up of an internal fund is certainly, as we can imagine, not an easy task. It may help, however, to make the external reinsurance arrangement for the ceding company easier and more clearly arranged.

Actually the large insurance company needs only one multi-line stop loss reinsurance to cover its internally set up fund. Such reinsurance is, however, very dangerous for the reinsurer, who should be able to continuously follow the movements and the level of the ceding company's fund, as well as all the internal covers that are granted by the fund and their changes and modifications.

There is justification for setting up another, external fund with the multi-line stop loss reinsurance company in order to extend its layer of coverage in the course of time and to distance the ceding company as a retrocession company from risk. The
principal fund in the globally reinsuring CRC scheme that characterizes the first CRC type remains, however, the ceding company’s internal fund.

The reinsurer should give a multi-line stop loss reinsurance cover in excess of a certain percentage (over 100%) of the fund’s level and the ceding company should give a multi-line stop loss retrocession cover on the reinsurance cover in order to enable operation and supervision of the PC strategy while adhering to Principles I & III.

All three levels of the reinsurance coverage system are very flexible and dependent on each other and can be easily adapted to all kinds of changes and new situations. All the covers of the fund for the PCs are individually worked out internally and can be adapted annually according to the requests and requirements of the respective PCs. The external, multi-line stop loss reinsurance for the internal fund as well as the ceding company’s retrocession cover for the external reinsurance cover depend on the internal and external funds’ levels and on the kind of covers and the capacity that are granted internally by the principal fund to the respective PCs, and they can be adapted annually in case of substantial changes or new facts.

The internal fund can only operate and guarantee adherence to the principle of fairness due to the external, global reinsurance cover and the retrocession cover on it.

THE SECOND CRC TYPE: THE INDIVIDUALLY REINSURING CRC

The general management of an insurance company may decide, when introducing a PC strategy, that the fund covering the PCs should be set up exclusively externally with a large and trustworthy reinsurance company that it selects for a long-term partnership to realize its PC strategy. As opposed to the single multi-line stop loss reinsurance cover in the globally reinsuring CRC, the reinsurance company now takes over the task of the internal fund in the first CRC type and participates in working out all the reinsurance covers for the PCs in the individually reinsuring CRC. The PC premiums contribute the main part in building up the external fund. The heads of the PCs may individually be given the possibility to present and work out their requirements for reinsurance covers directly with the reinsurance company.

The PC managers are, however, bound by restrictions: The general management agrees with the reinsurance company upon the kind of reinsurance cover it wishes to get uniformly for all its PCs, usually by consulting with its own reinsurance specialist, who is assigned and given the competence to arrange, supervise and control all the reinsurance and retrocession covers that are connected with the PC strategy. The external reinsurance covers within the PC scheme should be uniform for all PCs in order to keep all the reinsurance arrangements of the PC strategy simple and easily controllable. They will usually be XL reinsurance covers.

The internal fund’s manager of the first CRC type is replaced by the reinsurance specialist in charge of managing the PC strategy in the second CRC type. Instead of working out internal reinsurance arrangements with the heads of PCs, the reinsurance specialist in charge of managing the PC strategy now advises them on the external XL reinsurance arrangements with the reinsurance company, controls the compliance of all the external, individual PC reinsurance covers with the general management’s guidelines, and takes over the final responsibility to optimally adjust the reinsurance covers, the reinsurance conditions and premium rates with regard to the expected overall PC–performance of the insurance company at large.

When comparing the second CRC type to the first CRC type, the palette of tasks and responsibilities of the reinsurance manager as well as that of the heads of the PCs is
keen to change considerably. The PC managers may now have direct contacts with the reinsurance company and especially with an interlocutor within the reinsurance company who specializes in the line of business that their respective PC is responsible for. In the second CRC type they acquire more competence, which is limited, however, by the company’s guidelines and by the reinsurance specialist’s responsibilities and competence. The ceding company’s reinsurance specialist who is in charge of managing the CRC arrangements, has in the second CRC type a counterpart within the reinsurance company who is in charge of managing the reinsurance company’s CRC connections and CRC covers for all PCs. The PC managers may work out directly the volume, i.e. the upper and lower XL bounds of coverage and the conditions that are necessary for them. However, the reinsurance premiums they will have to pay will often be fixed by the reinsurance specialist on a fair basis, following Principle I. The reason for this restriction is the fact that it will be easier as well as cheaper for the ceding company to negotiate and demand good conditions on one overall reinsurance premium for all the covers on all PCs within the CRC scheme. How to distribute the overall reinsurance premium between the PCs according to the respective XL reinsurance covers will then be a matter of negotiations within the ceding company between the reinsurance specialist and the heads of the PCs — preferably without any intervention of the general management — in order to ensure adherence to the principle of fairness. Differences of opinion between the ceding company’s reinsurance specialist who is in charge of the PC strategy and a PC manager may lead to disagreements that should, however, be less discordant and problematic than in the first CRC type.
If every PC manager negotiates with the reinsurance company directly or via the ceding company’s CRC’s reinsurance specialist on an XL reinsurance cover that covers at least the difference between the large insurance company’s and the respective PC’s capacity on the respective line of business and gets such a cover then the ceding company’s total capacity is also guaranteed in the second CRC type for each PC, an actual split of the large insurance company into small “PC companies” is prevented and Principle III is fulfilled.

COMMENTS ON THE TWO CRC – TYPES

First comment
A multi-line stop loss retrocession cover by the ceding company is necessary in both CRC cases in order to enable the operation of the whole reinsurance scheme that is connected with a PC strategy. In case of the first CRC type an internal fund is set up to cover the insurance company’s PCs. Protecting such a fund on a multi-line basis, preferably by a stop loss reinsurance cover, is very risky and dangerous. The dangerous and effective protection by a multi-line stop loss reinsurance cover that the ceding company needs for its internal fund would require intensive contacts with the ceding company and a lot of information about the covers granted by the fund, the fund’s levels (including and excluding loss reserves, IBNR) etc.
Of course such a reinsurance cover enables the introduction and the maintenance of a PC strategy with an internal fund and is of great importance for the ceding company. In return for its services, the reinsurance company wishes to get support of the ceding company, which should be prepared to reduce the reinsurer’s risk by enabling it on the one hand to build up a fund for the ceding company by appropriate premiums and by yielding on the other hand to the multi-line reinsurance cover a multi-line stop loss
retrocession cover that probably no other (re)insurance company would be ready to
grant. We wish to underline that granting a multi-line stop loss retrocession cover to the
reinsurance company is last but not least very much in the interest of the ceding
company itself:

a. By granting such a retrocession cover the ceding company demonstrates its
interest in supporting its own PC – strategy.

b. It allows the reinsurance company to show much more flexibility in granting a
multi-line stop loss reinsurance protection to the ceding company’s internal fund
and in adjusting it to the fund’s requirements according to the ceding company’s
strategic aims. Such flexibility is very essential for a well running PC strategy. It
allows a continuous adaptation of the reinsurance cover according to the
requirements of the PCs.

c. The retrocession cover makes it easier for the reinsurance company to grant the
reinsurance cover needed for the fund since the “retrocessionaire” demonstrates
by granting the multi-line stop loss retrocession cover that the reinsurance
company can rely on its ceding company. Moreover, the CRC reinsurance
company does not need, therefore, to invest too much time and administrative
costs in detailed information on the ceding company’s internal fund for its
reinsurance cover.

d. Without the multi-line stop loss retrocession cover and the possibility to build up a
fund by appropriate XL reinsurance premiums the reinsurance company would
probably keep its reinsurance layer for the internal fund very limited and
participate in the CRC scheme, if at all, only in a very restricted and not very
useful manner.

In case of the second CRC type the reinsurance company provides XL covers for the
ceding company’s PCs in a multi-line reinsurance agreement and is building up
externally by reinsurance premiums of the PCs a fund that belongs de jure to the
reinsurance company but de facto mainly to the ceding company. The multi-line retrocession stop loss cover of the ceding company protects this
external fund and thus, in fact, the ceding company’s own interests. It allows,
moreover, better control of the outflows of money from the fund according to the
current ceding company’s strategic targets.
We do not discuss here the reinsurance-retrocession relationships within the second
type of CRC scheme since this is going to be a main subject in the second part of this
paper.

Second comment
While the second fund within the total CRC scheme in the first CRC type may seem a
little bit complicated and artificial, in the second CRC type only one external fund
exists, very naturally and persuasively. The reinsurance company grants in the second
CRC type conventional XL reinsurance covers to profit centers of the ceding
company. It gets in the beginning relatively high XL premiums in order to increase
the probability and the possibility of getting to a predefined required level of a fund in
favor of the ceding company as quickly as possible. The reasons for the relatively
high initial XL premiums for the PC covers are technically and conventionally
explicable. We have already mentioned some of them when describing the tasks of the
ceding company’s reinsurance manager who is in charge of building up and managing
the internal fund in the first CRC type.
Reasons for the initially high XL premiums in the second CRC type are:
- possibly little claims experience,
- additional premiums to cover the accumulation of risks between different PCs,
- the option of substantially reducing the premiums in future as a result of good claims experience, i.e., when the fund is growing and exceeds certain levels,
- possible participation of the PCs in one way or another in investment income on the fund, usually, by getting credit for investment income on the fund,
- an option for an extension of the XL cover by the external fund without an increase of premium, due to an increasing fund level, etc.

Third comment
In the first CRC type the multi-line stop loss retrocession cover and the setting up of an external fund make it possible for the reinsurance company to avoid a too extensive commitment on own account in its multi-line stop loss reinsurance cover for the ceding company’s principal fund and cancels the necessity of being continuously well informed on all the PC covers that the internal fund is granting. Consequently its administrative costs on the multi-line reinsurance cover are considerably reduced. In the second CRC type the reinsurance company has to grant XL covers to all the ceding company’s PC portfolios and can, therefore, not avoid acquiring continuous, time consuming information on all the portfolios it is covering. This fact underlines the better and more valuable integration of the reinsurance company in the whole CRC scheme in the second rather than in the first CRC type. Moreover, the ceding company can, therefore, much more easily replace its CRC reinsurance company in the first rather than in the second CRC type. The firm integration of the reinsurance company in the individually reinsuring CRC and therefore the commitment of both sides – of the ceding company as well as of the reinsurance company – to a solid long-term mutual relationship is also an important characteristic of unconventional strategic reinsurance programs.

Fourth comment
According to Principle II considerable competence should be given to the head of each PC. This competence may include the possibility for the head of a PC to look for reinsurance covers before the cover by the internal, respectively, external fund. The head of the PC has to pay for such reinsurance covers premiums that reduce the evaluation of his performance. On the other hand they reduce the potential fluctuations of his PC’s results and the size of reinsurance that his PC needs in excess of his “individual” reinsurance covers and, therefore, the premium for the reinsurance cover granted by the fund which improves the evaluation of his performance at year’s end. Aside from the guarantee of a fair evaluation of their performance that the managers of PCs are given, according to Principle I, by the CRC scheme, they may thus be given additional means beyond the CRC scheme to better optimize their performance. Of course, such additional means are connected with additional uncertainties that are often not easily controllable. They reduce, moreover, the possibility of the reinsurance specialist who is in charge of managing the CRC scheme to control the PCs and the general management’s survey over the PCs’ performances. The competence to decide on other reinsurance covers before the fund’s cover within the CRC scheme may, therefore, not be easily given to the heads of PCs.
**Fifth comment**

One of the important tasks of the reinsurance manager of a large insurance company who is in charge of a CRC scheme is to ensure that the company's stipulated net capacity is not exceeded due to the capacities of the PCs being increased by the covers of an internal or an external fund on the one hand and due to possible accumulations of events between the PCs on the other hand.

We should observe that a *insurance company*'s net capacity is much smaller in the second than in the first CRC type. In the first CRC type the insurance company’s net capacity is calculated before all the internal XL covers by the internal fund and after all reinsurance covers, including the multi-line stop loss reinsurance cover for the internal, principal fund. In the second CRC type the insurance company’s net capacity is calculated after all reinsurance covers including all XL covers by the reinsurance company’s external fund within the CRC scheme. In other words: The XL reinsurance covers by the fund within the CRC scheme do not affect the insurance company’s net capacity in the first CRC type but reduce it in the second CRC type.

Of course, the net capacity of the insurance company is partly reduced by the multi-line reinsurance cover on the internal fund in the first CRC type and this cover is not needed and does not exist in the second CRC – type.

We do not discuss the effect of the ceding company’s multi-line retrocession cover on its capacity – which is principally the same in both CRC types.

**Sixth comment**

When the claims (including loss reserves) at the end of the year exceed in the first CRC type the fund’s level at the beginning of the year and the income on interests on the fund that are credited to the fund during the year, then the fund’s level becomes negative. If the loss payments at the end of the year exceed the (positive) fund’s level (including loss reserves) at the beginning of the year plus interest income during the year then the reinsurance company has to pay losses up to a certain amount due to the multi-line stop loss cover. In the case that the reinsurance company has built up an external fund for the ceding company it pays money for losses out of the external fund into the principal fund of the ceding company. In the case that the external fund (including loss reserves) also becomes negative the reinsurance company pays the respective excess amount to the ceding company’s principal fund out of its “own pocket”.

In the case of the second CRC – type the reinsurance company pays money out of its “own pocket” whenever the (external) gross fund (including loss reserves) becomes negative. As we shall explain in the second part of this paper the probability of the net fund becoming negative is negligible.

**Seventh comment**

It is certainly complicated and unreasonable to split the internal fund in the first CRC type, and the external fund in the second CRC type into individual funds for the different PCs. Such a partition may again introduce problems that we avoid by the respective two CRC schemes that we have described. How then can the interest income on the fund be subdivided fairly between PCs that perform differently and whose cumulative contributions over time to the fund are different? When paying losses out of a fund, are they paid out of premium contributions of the PCs or out of accumulated interest income?

From this last question it is evident that how to divide a positive fund into a part of premiums and another part of interest income is a matter of opinion.
No clear-cut and satisfactory answers exist to these questions! Therefore, it is not recommended to attribute parts of interest income on the fund to PCs. Such attributions may not even meet with Principle I of fairness.

Instead of attributing parts of income on the fund to certain PCs – which would also be unusual in "conventional" XL covers – we recommend increasing the refund of a PC by year’s end for positive insurance technical results and/or increasing the cover and/or the reducing the premium for the next year.

In other words, an additional benefit for good performances of PCs due to the interest income on the fund runs over increased premium reductions and/or increased insurance technical refunds by year’s end and not over participation in investment income.

The cumulative claims experience of a certain PC may be bad and its contribution to the fund “negative” and yet the fund may be positive due to an overall good cumulative claims experience of the insurance company’s total portfolio. How then should the performance of the PC with the bad claims experience be assessed?

The answer to this question is that each PC should be assessed individually according to its individual performance. If a PC did not contribute positively to the fund it certainly should not benefit from the overall positive level of the fund and its premiums (into the fund) should even be increased due to its bad claims experience in order to fulfill Principle I of fairness!

Remark: We should bear in mind that part of the interest income that is credited to the internal or external fund covers the unknown accumulation of risks and the part of accumulation of risks that is difficult to estimate and to assign to certain PCs when calculating their premiums to the fund.

Final remark to Part I:
We have shown ways to overcome the difficulties that we mentioned in Part I as a consequence of the introduction of a profit center system into an insurance company’s strategy. If taken care of correctly the problems that are connected with a PC system become insignificant compared to its advantages, namely the stimulation to the PC managers and their staff to achieve and realize good results for “their” respective profit center.

PART II

The External Control of Profit Centers
We shall now concentrate on the individually reinsuring CRC (second CRC type) which is, as we have seen, the more natural and convincing CRC type.

We shall describe additional advantages of the second CRC type with regard to the CRC scheme.

The XL covers by the reinsurance company for the PCs and the external fund that is built up by XL premiums provide for an external control and monitoring the PCs as we shall see in the following in the final advantage.

a. We have dealt mainly with PCs of lines of business. PCs can, however, also be subsidiaries and agencies. In the past many countries imposed money transfer restrictions and even today certain countries still do so. If the insurance company’s central office is in such a country it cannot transfer a large amount of money to a subsidiary in another country that may be needed, for example, because of a catastrophe loss. A reinsurance company in another country that
covers that subsidiary as a PC and transfers the necessary amount of money is then of great help.

b. It may be advantageous for the subsidiary to get the cover from a subsidiary of the large reinsurance company in the same country. The head of the PC does not have to negotiate on his PC cover within the CRC scheme abroad but can negotiate on the cover in his own country with a reinsurance colleague from the same country who is better acquainted with the local problems and cover needs. The reinsurance company's subsidiary that probably has the status of a PC of the reinsurance company must retrocede its cover for the ceding company's subsidiary to its parent company if its capacity for the reinsurance cover of the subsidiary PC is too small.

We mentioned in a. and b. two advantages of the second CRC type that do not exist in the first CRC type. They help the ceding company to control and monitor its subsidiary via its reinsurance company in times of money transfer restrictions or via the reinsurance company's local subsidiary in the country of its own subsidiary, with which it is particularly familiar.

c. In the second CRC type the reinsurance company grants XL covers to its ceding company's PCs, is far more intimately involved in its CRC scheme and dedicates far more time, consultation and administrative work to its CRC scheme than in the first CRC type. It is therefore easier, more natural and understandable for the ceding company to grant the dangerous and conventionally unusual multi-line stop loss retrocession cover to the reinsurance company in the second rather than in the first CRC type.

d. In the second CRC type the insurance company can, therefore, much more easily dispense with its CRC reinsurance company in the first than in the second CRC type. The second CRC type requires a lot of trust between the two treaty partners and that confidence combined with the heavy commitment of both sides to the mutual CRC scheme guarantees - in contrast to the first CRC type a long-term relationship between the large insurance company and its CRC reinsurance company. The mutual confidence and long-term relationship between the reinsurance company and its ceding company are inherent in the second CRC type and also characteristic of an (unconventional) strategic reinsurance program (SRP). All these facts make it, of course, easier and more natural for the ceding company to grant its reinsurance a multi-line stop loss retrocession cover.

e. In the second CRC type the reinsurance company builds up a fund out of many XL covers to PCs in a much more acceptable way than in the first CRC type where it tries "artificially" to develop a fund from a relatively large premium of one multi-line stop loss premium. The fund, which is built up in the first place in favor of the ceding company, can increase much more quickly in the second CRC type than in the first CRC type and thus better reduce the ceding company's risk on its multi-line stop loss retrocession cover. We have here another reason why such a cover can be granted by the ceding company more easily to its reinsurance company in the second rather than in the first CRC type.

f. Two major advantages for the ceding company of an external fund, which are characteristic of the second CRC type, as compared to an internal fund, which is characteristic of the first CRC type, are the following: A reinsurance company has to book the level of a fund (including reserves) as loss reserves. When building up an external fund the ceding company thus "parks" its large CRC reserves (and does not need to prove these reserves as not being
profits) in the books of the reinsurance company on the one hand and gets on the other hand income on interest rates on the fund free of taxes whenever the fund or parts of it flow back to the ceding company, because the reinsurance company also books the interest income that is credited to the fund as an increase of loss reserves.

Again we note here a similarity between the second CRC reinsurance cover and an SRP. The fact that the fund in an SRP has to be booked by the reinsurance company as a loss reserve or a catastrophe reserve increases the reinsurance company's reserves considerably and allows "parking" of actual ceding company's profits with the reinsurance company which, moreover, allows interest income on the fund's (positive) level to be free of taxes.

In both cases the reinsurance company grants next to other important services the considerable advantages to its important ceding company on reserving and taxation described here.

g. Reinsuring most or all PCs of a large ceding company by XL covers by the second CRC type means that long-term branches like liability branches will also be covered and that again means that in the course of time, with high probability, a lot of loss reserves, IBNeR and IBNR will accumulate in the fund. Whenever these reserves surpass the actual fund's level, usually long before the reinsurance company has to pay out money, the total cumulative claims experience over time and over all the reinsured PCs becomes negative, a fact that justifies and even requires premium increases, especially if PCs that have produced the overall negative claims experience - in order to fulfill Principle I on fairness. These premium increases usually occur in time and prevent the fund from running out of money with high probability.

In this way the ceding company can, in coordination with its reinsurance company, keep control in the second CRC type of the fund's level and adjust it to the risk situation in time, monitor and check the PC scheme, guarantee justice and fairness to the PCs and, last but not least, prevent the ceding company from running too high a risk by granting a multi-line stop loss retrocession.

How a Combined, Conventional Reinsurance Cover gets Unconventional SRP Features

The combined, conventional reinsurance cover we are relating to is the individually reinsuring CRC or second CRC type, i.e. a combination of XL reinsurance covers to PCs of an insurance company and a multi-line stop loss retrocession cover of that same insurance company to the XL reinsurance company. We prefer the second CRC type to the first one for the many advantages that we have shown in the first part and in the first section of the second part of this paper.

The ceding company is often more interested in a reinsurance system that helps it to control and monitor its PCs and to fulfill Principles I, II and III than getting the XL reinsurance coverage for its PCs - just as it is usually more interested in getting an SRP for its unconventional advantages rather than for its reinsurance cover itself.

The ceding company itself is very much interested in keeping control over the reinsurance results of its PCs and how they develop in the course of time by developing an external fund that - as in the case of an SRP - de jure belongs to its reinsurance company but de facto mainly to itself.

In order to achieve this goal it is also very much interested in granting a multi-line stop loss retrocession cover to its reinsurance company - as we have described comprehensively in the first comment in Part I. In order to set up a fund quickly and
with high probability, high XL premiums must be initially demanded. Such high initial XL premiums can be justified for different insurance-technical reasons as we have shown in the second comment in Part I. The insurance-technical justification of the initially high XL premiums is most important not only vis-a-vis supervision and tax authorities but also with regard to the PCs, which have the right to demand fairness, i.e., correct XL premiums, not only in relation to the other PCs but also, absolutely, in relation to the cover they get.

Aside from enabling the ceding company to introduce and run a PC- system an external fund that is held and administered by the reinsurer has all kinds of advantages for the ceding company. In paragraph f. of the last section we mentioned the two major advantages for the ceding company of “parking” certain reserves in an external fund or even turning certain profits into parts of an external fund and getting interest income free of taxes on such reserves.

A Comparison between a CRC and an SRP

Once the ceding company and the reinsurer have decided to use the main part of the XL premiums of the PCs to build up a fund – which will be protected by a multi-line stop loss retrocession cover that is granted by the ceding company – we move in an SRP- like cover and can and should use the SRP terminology like:

- standard premium (SP) for the part of XL premiums flowing into the fund,
- cumulative result (CR) for the fund itself,
- loss experience discount for the interest income that is credited to the fund,
- profit commissions as a result of good claims experience to be paid by year’s end,
- additional premium for explicit SP increases as a result of bad claims experience,
- intermediate result adjustment (IRA) for intermediate reflux of a part of CR to the ceding company that is not due to loss payments,
- final result adjustment (FRA) for the reflux of the main part of the CR to the ceding company upon cancellation of the XL reinsurance covers for the PCs.

The part of premium that does not flow into the fund and fully belongs to the reinsurer for its XL reinsurance risks, its considerable service and important advice is called basic premium (BP) in the SRP terminology.

Whenever we speak of the fund or the cumulative result we relate to the fund including claims reserves, i.e. to the gross fund as opposed to the fund excluding reserves which we call the net fund.

All losses are paid out of the fund to the ceding company’s CRC reinsurance manager, as long as there is money in the fund.

As we shall explain later, no unconventional arrangements are necessary in case the fund becomes negative – as opposed to the usual SRP – and, therefore, we do not need to mention the SRP terms for such negative cases.

We described and commented on the SRP properties in detail in our last year’s paper on SRP for the Astin Colloquium in Tokyo. The unconventional part of the coverage in the CRC scheme is a specific SRP with its basic properties, which we shall not describe here again. However, specific CRC properties remain and we shall discuss
them in comparison to the analogous general SRP properties in such a way that they will be understandable by themselves:

- The basic premium should be larger in a CRC than is usually the case in an SRP since the CRC reinsurance company is very much involved in the whole CRC scheme as a consultant as well as an XL reinsurer of many PCs whereas an SRP runs usually nearly "automatically" and does not need much involvement from the reinsurance company's side. The service of an SRP reinsurer is indeed considerable – like that of a CRC reinsurer - but the time he needs annually to administer the SRP and his administrative expense are considerably smaller than in the case of a CRC reinsurer. As opposed to a usual SRP a permanent contact in a CRC may not only exist between the reinsurance company and the ceding company's reinsurance manager who is in charge of unconventional reinsurance treaties but also between the reinsurance company and the heads of the PCs.

- Because the reinsurance company books the whole fund as reserves, it is not interested to let at least the net fund's level exceed a certain amount (on the level of the gross fund it has less control). The interests of the ceding company are similar since it is obliged to distribute profits fairly among its PCs and should not, therefore, let the net fund exceed a certain amount of security "at the expense" of its PCs. Consequently, it will be easy for both sides to determine from the beginning an upper level (UL) for the CRC net fund. This level can, of course, be exceeded due to high loss reserves. The fixed upper level of the CRC net fund should, on the one hand not be surpassed for the reasons mentioned above, and should be reached quickly, on the other hand, for safety reasons, in order to decrease the probability of the net fund becoming negative as much as possible in favor of the reinsurance company as well as of the ceding company as a multi-line stop loss retrocessionaire.

Remark: Not taking the retrocession cover into account the reinsurance company would only have to pay out money, in case that the gross fund becomes negative as we have already mentioned in other words in the sixth comment of Part I.

The more the net fund approaches the UL the more the SP will be reduced, as in every SRP - either implicitly, for example by a formula that makes the SP proportional to the difference UL-CR, or explicitly, by a profit commission, in both cases due to good cumulative claims experience.

Remark: The net fund's level and not the level of the gross fund is the correct measure for the cumulative claims experience over time.

The implicit or explicit SP decreases as a result of a good cumulative claims experience over time. It thus reduces the ceding company's annual contribution to the fund. A highly reduced SP reflects a consequence of the initially relatively high XL premiums and of the unconventional structure of the total reinsurance coverage that grants additionally tax free interest income on the gross fund. Such considerable SP reductions mean considerable reinsurance premium reductions in favor of the PCs. Of course, it is again important to distribute the benefits that the SP reductions allow for fairly among the PCs, i.e. to look either for a correct XL premium reduction for each PC at the beginning of the year or for a fair distribution of the reinsurer's profit commission among the PCs at year's end.

The XL premium reductions for the fund may be fixed by discussions between the manager of the reinsurance company who is in charge of managing the CRC XL covers and the heads of the PCs in cooperation with the ceding company's CRC reinsurance specialist. The profit commission, however, is given by the reinsurance
company directly to the ceding company’s CRC reinsurance specialist who has to look for a fair distribution of the benefits among the PCs.

In contrast to a usual SRP that consists of one treaty and may run automatically for years a CRC reinsurer covers PCs conventionally in different XL treaties and takes continuously care of their wishes for changes in coverage due to increased exposure, for including new risks in their XL cover, for changing cover conditions etc. The reinsurance company’s unconventional part within an individually reinsuring CRC is usually changing every year and does not run automatically.

We have mentioned in the SRP terminology the intermediate result adjustment (IRA) and the final result adjustment (FRA). Especially the latter term that decides what should happen with the CR upon cancellation is most important in a usual SRP. We even recommend not to sign an SRP treaty if there is yet some disagreement upon the FRA.

In a CRC we have many XL reinsurance treaties and a multi-line stop loss retrocession treaty. Even if the cover of the latter treaty is uncommon all the covers are conventional. The only unconventional part of a CRC is an agreement between the parties how to define, in an uncommon way, what are the reserves of the XL reinsurance covers (the reinsurance company books the whole gross fund as reserves) and how to handle them.

An FRA and especially an IRA do not fit into the CRC that consists of a set of conventional treaties. For both of them it would be less easily explicable what they where introduced for than in a usual SRP. Fortunately enough they are actually also not needed in an SRP!

Premium increases and premium decreases can well and fairly be distributed over a number of PCs and the (positive) net fund’s level can, therefore, well be kept under control without the help of an IRA. We have moreover another flexible premium parameter, namely the ceding company’s retrocession premium that leads to a flow back of money from the external fund to the ceding company that we can use in order to direct the net fund’s level.

We recommend not to annul the CRC connections between the partners over night but to let the money in the fund flow back slowly, for example, by over-reducing the XL premiums for the PCs, by extending the XL covers and/or by extending the multi-line stop loss retrocession cover in order to justify a retrocession premium increase. An FRA is then, of course, unnecessary.

Denote: L: loss reserves, F: fund, i.e. gross fund, R: reserves
The reinsurance company’s reserving should be: \( R = \max(L, F) \)
If the ceding company needs the amount collected in the fund promptly, where \( F > 0 \), we can distinguish between two situations:

In the first situation the net fund is negative, the gross fund, however, positive. Then \( L > F > 0 \) and the net fund \( N = F - L < 0 \) can be transferred immediately as part of the loss reserves to the ceding company for the sake of getting released of all CRC liabilities. This is a common procedure also in conventional reinsurance.

In the second situation, where \( F > L \), two possibilities exist of transferring the fund’s amount to the ceding company:
The first, more common solution would be to estimate \( L \) very cautiously, i.e. very highly and transfer it immediately to the ceding company. The remaining, already reduced net fund \( N = F - L \) would be transferred as soon as possible by highly reducing the SP via new claims and newly reported claims on the one hand and via increased retrocession premium due to extended retrocession coverage on the other hand.
There exists, however, another, unusual solution out of an uncommon but plausible approach:

Since a reinsurance company that keeps de jure a fund for a ceding company should book the reserve \( R = \max(L,F) \) it may also transfer on the spot this reserve or a considerable part of it to its ceding company for the sake of getting released immediately of all CRC liabilities. This second solution is much more immediate and comfortable than the first solution for the ceding company as well as for the reinsurance company. In both situations and both solutions in case of the second situation a prompt termination of a CRC relationship between the two parties results in a more or less immediate transfer of the fund to the ceding company. No FRA is, therefore, necessary.

Remark:

When considering the gross fund - as long as \( F \geq L \) - as a special reserve that includes all the reported, and part of or all not enough reported and not reported claims reserves in the "SRP-like", unconventional part of a CRC, the uncommon view that the SRP - requirement of paying upon cancellation at least large parts of the fund immediately back to the ceding company by an FRA seems all of a sudden quite natural!

Moreover the whole unconventional part of a CRC system can be looked upon as a natural way of reserving. Reserves that are including all reported, partly reported and unreported claims are regarded in a cumulative way over time. A basic demand and main characteristic of an SRP - the fact that it has to run in a cumulative way over time - is thus naturally fulfilled in the unconventional part of a CRC.

The last specific, important CRC property that we want to discuss in this paper is the fact that as opposed to a general SRP no special (unconventional) measures must be taken for the case that the reinsurance company has to pay out money because the gross fund becomes negative. The main reason for this CRC property is the fact that by using CRC tools correctly the probability of the gross fund becoming negative are very small and after a few years negligible.

The fund is most "endangered" at the beginning of a CRC when large claims have to be paid out immediately. However, we have described insurance-technical reasons that should, for example, also be acceptable for insurance supervising authorities. We demonstrated why initial, relatively high XL premiums can and should be demanded from the PCs. The high standard premiums let usually even the net fund, together with the interest income credited to the fund, grow fast.

After a few years the net fund has usually reached a certain "safety" level which includes more or less large claims reserves, mainly from PCs of "long-term" branches. At this point the probability of the gross fund becoming negative becomes negligible. The moment that the net fund less the accumulated interest income on the gross fund(!) - which is not taken into account in a conventional property-casualty reinsurance cover - becomes already negative, we have cumulatively over time a negative claims experience which allows technically for an increase of the standard premium. Again, this increase has to be fairly distributed among the PCs, some of which may even enjoy, at the same time, premium decreases due to very good claims experience.

These very early standard premium increases decrease substantially the possibility of the gross fund becoming negative.
If we look at an annual perspective instead of a timely cumulative perspective every single cover year of bad claims experience already leads to increases of standard premiums and reduces the probability of the gross fund becoming negative even more.

Last but not least the multi-line stop loss retrocession cover may be changed annually according to the fund’s level and in mutual agreement according to the partners wishes, as long as the cover is insurance-technically reasonable. We want to describe here three cases of such covers, one of which reduces the probability of the reinsurance company paying money from outside the fund is reduced nearly to zero, whereas in the other two cases no possibility of reinsurance payments from outside the fund within a certain year of coverage exists:

In the first case the lower SL level of the multi-line retrocession cover is slightly over the net fund’s but below the gross fund’s level.

In the second case the lower SL level of the multi-line retrocession cover is below the net fund’s level, however, in excess of the conventionally decisive net fund’s level less the accumulated interest income that was credited to the fund.

In the third case we apply the conventionally used annual perspective by using a lower SL level for the multi-line retrocession which keeps the reinsurance company for that year on risk but withdraws it from any risk on a cumulative perspective.

The multi-line stop loss retrocession covers in all three cases are insurance-technically correct and should be acceptable to the supervising authorities.

Remark:
When the gross fund would become negative the necessity of getting into a more comfortable position as soon as possible may force the ceding company to prescribe to its PCs the cover volume and the XL reinsurance premium and restrict the PCs’ freedom of actions. Such a development does not fit into the concept of a PC system and can be avoided the better, the further away a positive net fund’s level is from the zero level. This consideration is another reason for the CRC partners to coordinate in avoiding a negative fund’s level by means as were described just before.

Final remark:
The individually reinsuring CRC is a system of conventional XL reinsurance covers for profit centers and one multi-line stop loss retrocession cover on timely accumulated results of all XL covers. Within the frame of these conventional covers an unconventional part which is basing on a fund is built in. Both partners, the large insurance company and its reinsurance company, have in many respects parallel interests. Moreover, both partners see the reinsurance cover in the first place as a mean to fulfill strategic intentions of the ceding company. This task seems in many cases more important than the XL reinsurance covers themselves. The unconventional part within the CRC system - which is very close to an SRP - is important for the introduction and running of the ceding company’s PC system which should fulfill the three Principles of a profit center system. It should not, however, endanger the whole frame of conventional covers within the CRC system by not being accepted, for example, by supervising or tax authorities. Therefore, it is important to avoid as many unconventional elements as possible. We have shown that an intermediate and a final result adjustment are not necessary. Moreover, all the unconventional SRP elements that are connected with a negative gross fund are also unnecessary, since a negative gross fund can be avoided with high probability. For that reason, when the gross fund should ever get negative, the reinsurance company does not forward money, like in a usual SRP but it pays money to the ceding company “out of its own pocket”.