Commutations - A Practical Guide

What is commutation?

1   A commutation is a commercial agreement between an insurer and its insureds. It is not an actuarial calculation, although actuaries are, or should be, involved at most stages of the calculations and negotiation.   This paper is meant to address commutation from a practical perspective. We will illustrate using examples, some of the issues involved and the techniques which might be considered for the evaluation of liabilities and identification of the risk premium involved.

Why commute?

2   A commutation negotiation normally commences with an approach by either the insured and the insurers seeking a commutation. There are many reasons for such an approach. The main area from the point of view of the insurer are:-

(a)   saving of administrative costs;

(b)   desire for certainty;

(c)   commercial considerations

-       release of LOCs or other type of guarantee fund

-       resolution of disputes

(d)   global deal at parental level, often smaller relationships are tidied up as part of a global deal;

(e)   strategic reasons.

From the insured's viewpoint, the reasons for the commutation can be associated mainly with:-

(f)   savings on administrative costs;

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(g)   concerns regarding the solvency of the insurer;

(h)   strategic reasons;

(i)   cash flow requirements.

3   An actuary undertaking a commutation calculation should attempt to understand some of the background to the negotiations. This would assist him in formulating his advice. In particular advice relating to the level of uncertainty involved in the calculation and at what stage does the deal become totally unreasonable at least from a purely mathematical point of view.

4   It is likely that all relationships between the insurer and insured involved will be commuted in a single deal. This however is not always possible and it is perfectly acceptable for some contracts to be excluded. We would highlight that the actuary has to ensure that he understands precisely which contracts will be involved and which will be excluded.

5   If we assume that all identified involvements will be commuted then the question is how should the company identify all of its relationships with a particular insured. This process is not as easy as it sounds in particular for London insurers where records have been traditionally maintained on a Broker basis rather than a "principal" to "principal" basis. The position is further compounded in that records may have been maintained by the Broker(s) and not by the insurer.

What do commutations normally contain?

6   There is no such animal as a standard commutation, however every commutation is comprised of the following elements:-

- •   paid losses;

- •   case estimates;

- •   IBNR;

- •   uncertainty price.

Paid losses

7   The paid losses should be a matter of fact! In our experience however they are actually very difficult to determine. The paid losses include broker balances which have been paid by the insurer to its brokers and which have not been passed to the insured. They may also include losses funded by the broker which the insurer still has on its books as outstanding claims.   It could also include unallocated cash. Reconciliation therefore usually involves more than the two parties involved in the transactions and can therefore be an extremely complicated process. Fortunately for the majority of actuaries, this type of reconciliation usually falls outside the scope of his brief and therefore can be ignored.

Case estimates and IBNR

8   The case estimates of companies are established on a variety of bases. It is therefore appropriate to consider the total reserves, case estimates plus IBNR for each contract in isolation and in the aggregate across all commuted policies.

What data needs to considered

9   An actuary asked to advise on the appropriate level of a commutation should consider the following matters:

    (a)   what business is covered (eg property, casualty, marine, aviation);

    (b)   type of contract

        -    direct policy (including facultative business)

        -    excess of loss

        -    quota shares

        -    surplus lines

        -    retrocessional business (including LMX business)

        -    special contracts (top & drops, time and distance etc)

    (c)   the attachment point(s) of the contract(s);

(d)   the years involved;

(e)   the presence or absence of catastrophes including latent claim catastrophes;

(f)   the expected timing of any payment(s);

(g)   reinstatement terms;

(h)   coverage disputes;

(i)   extension of cover clauses;

(j)   paid and outstanding losses at the contract level;

(k)   paids and outstanding losses in the aggregate for the class of business concerned.

10   The above list is not meant to be exhaustive. It does however illustrate that the consideration of development at the individual contract level involves far more detail than most actuaries would take account of in a normal reserving exercise. A commutation is more akin to pricing than to reserving and therefore the techniques which need to be applied are based more firmly within a pricing framework than within a reserving context.

What techniques are applied?

Premium

11   The first pricing of any contract was the premium charged by the original underwriter. This is seldom relevant to the commutation except in those cases where little is known about its exposure and no claims have emerged. In these cases the premium is used as a basis for the calculation and a form of Bornhutter-Fergusson technique is applied.

Claims projection

12   On some contracts it is possible to project the existing claim development on the treaty   In this context, sometimes a projection is conducted of the claims development of the contract relative to the claims development of all other contracts in the class and year of the insurers' business. This allows the estimation of loadings

which could be applied to the general IBNR projection for the class and year to reflect the specific nature of the contract under consideration.

13   This type of technique is particularly relevant for proportional arrangements but not always applicable to non-proportional covers.

Loss projections

14   Where a contract is being impacted by one or more major losses then the development of each major loss could be projected in isolation.   This allows an evaluation of the ultimate level of the major loss which can be compared to the policy limits of the contract under consideration.   An evaluation of this nature produces an ultimate result for the contract concerned.

15   This type of projection is relevant to excess of loss catastrophe type coverages, particularly at higher layers, where the development of claims on the contract is dependent on the development of one or two major losses.

Frequency/severity approaches

16   This involves the consideration of the cost of claims impacting particular levels of a programme based on the number of claims impacting the programme at that layer from historical records and the average cost of claims emerging.

17   This type of projection is particularly relevant to working layers of the programme.

Simulation techniques

18   This involves the development of a model of the reinsurance programme of the insurer and the evaluation of losses at each layer and attachment point using simulation techniques.   In this context, it is usual to consider various types of losses separately and select means and variances for each loss type in isolation.   It is customary that various distributions are applied to determine loss size including Gamma, Log Normal etc.   Claim frequency is parametised from the underlying data on major losses.

Inwards commutations

19   Where inwards commutations are considered it is customary to obtain additional data from the proposer to allow the estimation of value using broad bench-mark parameters.

Set-off

20   Where inwards and outwards relationships are being commuted at the same time, it is customary for the amounts to be set-off against each other and a net balance estimated.

Discounting

21   Once the calculations are done the actuary should apply expected cash flow patterns by type of loss to the undiscounted amounts. Alternatively, a mean term approach could be adopted where the mean term of payment of the liabilities is selected and a rate of discount applied. It is appropriate to discount at a relevant rate of interest. It does however warrant comments on the selection of an appropriate rate of interest.

22   The rate of interest should reflect the rate of investment return that the insurer could be expected to earn on its assets over the future term. In some cases the actuaries on each side of the transaction would agree on the level of the rate of interest.

Price

23   When a commutation is obtained certainty is passed from one party to the other. This certainty has a price which can be evaluated on a statistical basis. A consideration of the potential variability at each level of the programme provides an idea of the price which should be paid. Care must be taken to ensure that the contract is not exhausted by the selected loading and a claim in excess of the policy limits submitted.

Summary

24   Commutations are an interesting area of operation. It must however be remembered that, notwithstanding the steps taken to estimate the final answers, a commercial negotiation will take place and a willing buyer willing seller position will be reached.

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