

Some Thoughts on the Estimation of Pollution Claims DRAFT

1. Introduction

- 1.1 The general insurance actuary may be required to estimate the future liabilities for latent claims arising from the portfolio of an insurance or reinsurance company or a Lloyd's syndicate. This may be as part of a normal reserve valuation or as an exercise specifically dealing with latent claims.
- 1.2 Papers have been presented to the 1990 and 1991 GISG conferences as an introduction to latent claims, but no specific advice has been given to actuaries as to the factors which should be taken into account and approaches to the problem which should be given attention. This unofficial note has been prepared for the consideration of the London Market actuaries who are particularly exposed to such problems.
- 1.3 Great care is required by the actuary to ensure that a false impression of certainty is not given, since the subject is a complex one, subject to a great deal of uncertainty. This is particularly true of US pollution liabilities, where the ultimate outcome is extremely susceptible to the result of future American court decisions.
- 1.4 The impact of latent claims on the overall financial strength of the organisation can vary dramatically from those where exposure is nil or negligible to others where, if the worst prognosis is confirmed, the solvency of the organisation is severely threatened. In the latter case, the matter is likely to result in substantial public interest and may involve legal action involving the organisation and its professional advisers.
- 1.5 In spite of the uncertainties, it is fairly natural that the directors of the company or the managing agency of the syndicate will expect those responsible for estimating the reserves (increasingly including actuaries) to give an opinion as to the likely ultimate quantum of the latent claims. This note is intended to help actuaries who are asked to provide such an estimate.
- 1.6 It is incumbent on the actuary to perform some basic researches into the vast volume of data available on claims of this nature before producing an estimate. Such researches should have the objectives of:

- (a) identifying the key factors,
 - (b) attempting to quantify their current impact,
 - (c) superimposing information on trends, including trends in litigation, and
 - (d) projecting this information into the future
- 1.7 It is likely that it will prove necessary to take a broad overview and to simplify the process sufficiently to make it manageable without oversimplifying.
- 1.8 It is particularly important that claims arising from the different latent causes are dealt with separately, both in order to see the development features of these claims and to ensure that they do not distort the basic patterns.

2. Issues for Consideration - Pollution

- 2.1 This section deals specifically with problems of pollution which, as well as having the potential to produce the most serious insurance losses, exhibit some of the most intractable problems in terms of quantification and projection.
- 2.2 The most important feature to understand is that the pollution problems which are currently causing difficulties for insurers in USA, and which are also showing potential to do so in other countries, have not yet developed to a point at which it is possible to make many categorical statements as to liability, since many of the issues concerned have not yet been decided by the Courts.
- 2.3 In relation to the USA, the situation is further complicated by the multiplicity of different jurisdictions, each state having its own laws, and even within states, the attitude of Courts can vary quite significantly.
- 2.4 The main volume of pollution claims is in respect of clean-up of polluted dump sites. These claims arise from the 1980 CERCLA legislation, which imposed potential liability on so called Potentially Responsible Parties (PRP's). PRP's could be site owners, waste depositors, transport contractors, creators of toxic waste, etc. and CERCLA required them to clean up the sites either directly or indirectly (ie. the PRP bearing the cost of a third party clean-up).
- 2.5 Many of the waste sites were in use over a considerable number of years and involved a large number of PRP's. It was a fairly major exercise to identify those involved in some sites, and this is usually the first link in the chain of uncertainty. Once identified PRP'S may attempt to claim under their insurance policies.

2.6 The insurance policies concerned were generally not drafted to envisage the issue of CERCLA clean-up; in most cases they pre-dated the CERCLA legislation. There was, accordingly, major dispute as to whether the cost of clean-up was covered; this continues.

The principal defences to coverage include:

- (a) Costs under CERCLA are not "damages" within the meaning of liability insurance policies.
- (b) Lack of "legal suit" - that the requirement to clean up sites is not of the required form to constitute a "suit", as required under the policies.
- (c) Lack of the "unexpected or unintended damage" when required under the policies.
- (d) "Owned property exclusion" - this excludes claims for damage to the insured's own property.
- (e) Various pollution exclusions current in policies issued at various times.
- (f) Inability to obtain cover for a loss known at the time the policy incepted.
- (g) Late notice of claim.

It is, in general, clearly necessary for the insurer to win on only one of these issues for a particular case under a particular policy, whereas the insured has to win on all.

One general trait among the more developed litigations is that whereas coverage may exist on policies current during any period when the PRP was unaware of the environmental impact of their acts, coverage would cease from the time when it was clear they realised the damage caused. This relates to the argument in (c) above.

This feature was in addition to the general movement in about 1970 for policy wordings to include pollution exclusions, at least where pollution was not "sudden and accidental".

- 2.7 Assuming that the disputed coverage for a particular clean-up is found under a PRP's insurance policies, it is next necessary to address the issue of the definition of a loss. This may not be clear from the policy, since many different wordings exist, most of which do not specifically relate to this type of claim. It is, however, fundamental to the decision as to where the cost of the losses falls. The issue, in fact, divides into two main parts - on which year's insurance and on which layer or layers of insurance. Even this presupposes that the cost is attributed to liability rather than property policies (ie. it is a third-party rather than a first-party claim).
- 2.8 Even then, there remain a number of issues which give rise substantial further uncertainty. These include the actual cost of clean-up of a particular site. This cost can vary enormously depending on the remedy which is selected; further, both the decision on remedy and the clean-up itself can take many years.
- 2.9 The problem of which year of insurance contained the event giving rise to the loss arises principally because of the continuous nature of the pollution and its effects. It is possible that, like asbestos-related claims, the Courts will decide on an exposure approach, a manifestation approach or some form of multiple-trigger definition of date of loss.
- This is likely to have enormous bearing on which insurer is found liable.
- 2.10 The decision on which year of years of cover applies (including how many years) is also likely to have considerable bearing on the definition of a loss. It is quite possible that, as in the case of the Asbestos Claims Facility, some compromise definition of what constitutes a loss may prove necessary. Examples of possible loss definitions are "per assured per site per year", or "per load of pollutant", etc. The definition selected is likely to materially affect the way in which the loss is spread horizontally or vertically on the insured's insurance programme.
- 2.11 As a result of such a decision, it may then be possible to see how the insurer's reinsurance programme is likely to react to the losses.
- 2.12 This whole process is, in the main, untried at the current time, but it is undoubtedly fundamental to how much pollution clean-up costs will cost the insurance industry and particular insurers or reinsurers within it.

- 2.13 Given the considerable number of different hurdles which must be overcome before the cost, if any, of a particular claim against a particular insurer, is known, it is inevitable that the uncertainty of the situation remains of a high order of magnitude. It is expected that it will take several years of decisions, appeals, reversals or confirmations before the situation becomes significantly clearer, particularly given the amounts and the number of different jurisdictions involved.
- 2.14 In the meantime it remains necessary for the actuary to help in the provision of some assistance to his principal, be the relationship employee/employer or client/consultant.
- 2.15 The above comments focus on direct exposure to pollution claims; additional complications arise in respect of proportional reinsurance, excess of loss reinsurance and (particularly) retrocessional exposures. Such points are beyond the scope of this paper at the current time.

3. Methodology - Pollution

- 3.1 The actuarial approach can be divided into at least three parts:
- (a) evaluation of the likely costs of site/assured combinations on which attorney reports, including estimated reserve potentials, are available,
 - (b) evaluation of sites or site/assured combinations which are not currently the subject of attorney reports, and
 - (c) monitoring the progress of these on a regular year-by-year basis.
- 3.2 In relation to the evaluation of known losses, it must be appreciated that the attorneys' "reserve potentials" make no allowance for the "win factor" arising from the legal defences available to insurers, as outlined in Section 2 above. They, therefore, potentially overstate, perhaps very significantly, the likely cost to insurers of the existing site/assured combinations. It is essential that the impact of the "win factor" is estimated to give a truer base from which to estimate IBNR.

- 3.3 This will require the actuary to form judgements on the outcome of the various litigation issues; it is for this reason that a knowledge of the content of, and trends in, the issues in Section 2 is so important. Whilst a body of US case law is beginning to emerge, many uncertainties remain, and provide serious problems in arriving at suitable assumptions on which to base the overall judgement. Any attempt to apply rigorously the factual results emerging from this case law to the outstanding cases is likely to prove extremely complex, in view of the great number of different variables concerned in the various cases. The establishment of a suitable data-base would be a potentially useful first step, but it may be several years before any significant benefits accrue from the exercise.
- 3.4 In addition to the assessment of the legal background to the cases, it will be necessary to consider the impact of changes in the level of clean-up costs themselves. As well as general inflation, account should be taken of the adverse impact of increasing stringency of clean up standards and the possible beneficial effect of new clean-up technology.
- 3.5 It is unlikely that sufficient hard information will exist to do more than form a broad judgement as to the general direction of likely costs over future years. It is important, however, for the actuary to be aware of the volatility of his overall estimates to changes in the assumptions.
- 3.6 Turning now to IBNR sites and assureds, it is clear that this involves a further order of magnitude of difficulty. However, there are available various estimates of the number of sites to be cleaned up, and the actuary should aim to base his extrapolation on relevant research such as this rather than arbitrary multiples with no supporting arguments.
- 3.7 The actuary needs to understand how the current position, as described in the attorney reports, relates to any research on which it is proposed to base any multiples to ultimate. In doing this, it is essential that the actuary understands the process generating reports into London and the roles played by all those involved.
- 3.8 The attorney reports often refer to a number of sites (often a very large number) for which no reserve potentials have been recommended because very little is known about the sites involved. These should be treated within the overall IBNR calculations, although a slightly more refined method may be possible.

- 3.9 Pollution clean-up will be a very long process and, accordingly, the associated insurance claims will have a very long-tail payout pattern. Discounting is a complex question and would involve making due allowance for the likely inflation rate on clean-up costs, the gearing effect of excesses on insurance and reinsurance policies and the great uncertainty in the underlying assumptions including that on the timing of the payment of claims.
- 3.10 It is important that the actuary understands the fundamental differences between the processes driving pollution claims and those applying to either "normal" claims or other "old-year" problems such as asbestos-related bodily injury claims. Whilst pollution claims, like those emanating from asbestos problems are unlike "normal" claims in that "year of account" has very much less meaning than "calendar year" in the development process, they differ because of the significantly different legal framework which pertains. This is likely to result in a much higher "win rate" for insurers in pollution litigations as against those involving asbestos bodily injury claims and also to result in a totally different shape in the claims size distribution due to the way in which claims may, or may not, be aggregated in relation to the definition of loss.

As a consequence, the use of any development patterns based on other types of loss as a basis for projecting pollution losses is likely to be inappropriate.

- 3.11 In common with any actuarial evaluation, the choice of method can be very important. The choice of an inappropriate method can be particularly liable to result in the deduction of erroneous conclusions in an area, such as pollution, where the framework underlying the claims is still evolving. Examples have been encountered of a method (eg. fitting a particular curve) which appears to give a very good fit to the data for some time, but then deviates wildly from it. A mathematical approach applied without reasonable understanding of the background to the claims is unlikely to be appropriate.
- 3.12 As in most actuarial work, it is vital that the situation is monitored on a regular basis to test the validity of the assumptions used in arriving at the original estimates. Any deviations from expected outcomes can then be fed back into the projection methodology to improve subsequent results. In the case of pollution, it is likely to be inappropriate to carry out such monitoring at a frequency greater than annual, since attorney updates are usually only produced on this basis.

- 3.13 Monitoring of pollution claims at individual company/ syndicate level can be supplemented by an awareness of developments at market level, as this may throw additional light on different aspects of the problem.
- 3.14 Whereas for "normal" claims it would be expected that monitoring, like projection, would use a triangulation or curve-fitting process, as already explained in 3.10 above this is unlikely to be appropriate for pollution claims. A much more pragmatic approach applied to monitoring is likely to be appropriate based on the particular projection philosophy applied to pollution.

23 September 92