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THE TGP NEWSLETTER: ISSUE 4 - September 2005

Of Probabilities, Uncertainties and Managing Expectations

Introduction

On probability much has been written, and we may need to look no further than the correspondence columns of the FT in mid August and letters relating to the Monty Hall question (of goats and cars) to see that there is still plenty of mileage in this one. As to uncertainty, well the saying goes that in this life only two things are certain: death and taxes. Whatever one's view might be on the second proposition, it takes little effort to see the common acknowledgement that the overwhelming bulk of life must be full of uncertainty.

We have obtained a draft publication issued in July of this year by the General Insurance Reserving Issues Task Force (GRIT) of the Institute of Actuaries which deals with the problems that actuaries experience communicating this feature, and what follows is, in the main, a commentary on that draft paper. We do acknowledge that the paper itself represents work in progress and may be subject to revision, possibly of a significant nature.

The Actuaries' Problem

With this as a background, it is at once both difficult and easy to be sympathetic towards UK actuaries' current concern over the problems of communicating uncertainty. On the one hand, since everyone is aware that life is an uncertain business, there should really be no need to announce the fact. On the other hand, actuaries have made some play of their ability to forecast the future and find themselves in difficulty if the future turns out to be wrong.

We at TGP are by no means unsympathetic to anyone who attempts to do a difficult job, actuaries included, being of the opinion that there is far too big an industry of armchair critics in this country ready to jump on anyone, from business professionals to the military and the police, who actually does something. 'The man who never made mistakes never made anything', it is said, and we believe that there is much wisdom in this statement.

The actuarial paper, referred to above, ranges over many technical matters which we do not intend to rehearse here. We would, however, like to look at three issues that arise from the GRIT panel's work, namely:

- Is the recipient of the information a major part of the problem?
- How is uncertainty handled in other areas of life?
- What is right and wrong in the business of forecasting?

We do this in the hope that it will help to crystallize thinking around some fundamental issues and avoid the danger of seeking solace in technicalities (something that the actuaries wisely appear to be looking to avoid).

The Culpable Recipient

On the first point, about the recipient's role, let us consider the articulate oaf. We have all met this character who frequently enjoys more than a little success, at least in the short term. Possessing all the confidence that comes from total ignorance, the oaf outlines a glowing scenario of what can be delivered and will often find favour in the selection process over the knowledgeable candidate who, because of a good understanding of the issues, points out downside risks or hedges objectives about with caveats. If appointed the oaf may get lucky, but it is more likely that things will screw up and then where will the fault lie? With those who made the appointment most would say and we would agree; but why did they make it? Because they preferred the certainty of the ignorant one to the caution of the knowledgeable.

So those users of actuarial services who complain that actuaries got things (in this case loss reserves) 'wrong' – a subject to which we will return later - maybe only have themselves to blame for seeking certainty where none was to be had.

Uncertainty Outside the Scope of the Actuary

Reading the paper it is hard to avoid the implication of a belief that uncertainty only exists in areas touched by actuarial science. What about medicine, economic forecasting and law, to take just three areas where future outcomes are uncertain? Doctors get diagnoses wrong, it is commonplace to read diametrically opposed forecasts from economists (in the same publication) and lawyers lose cases. It might be worth asking how these professions manage stakeholders' expectations.

The medical case is an interesting one. A little time ago there was some criticism of oncologists treating lung cancer sufferers for giving their patients unrealistic hopes of being cured. But a doctor also does not wish the patient to become discouraged and give up the will to live. Perhaps there is something to be learned from other professions in this regard.

What is Right and Wrong in Forecasting?

One of our number is fond of observing that the only thing that can be said with certainty about any business plan is that it is wrong. This statement is intended to acknowledge the simple fact that the future cannot be predicted with accuracy. A good business plan (there are other types) is intended to reflect the likely outcome of a trading period in the light of the best information available at the time when it was produced, and it serves to enable management to judge actual performance outcome.

But because every executive knows, or should know, that a business plan cannot be a perfect statement of a future position, it does not mean that the plan can be put together in a cavalier fashion. Major decisions will be based on these projections and huge sums of money may be at stake, so the planning process had better be pretty thoroughgoing.

Of course businessmen still get things wrong and may lose money for their shareholders when this never was the intention. Some of these 'errors' become the subject of litigation and here it is interesting to look at the guiding principles of the Delaware Court of Chancery. The US State of Delaware is home to many large corporations and so its Court of Chancery has to rule in a large number of corporate disputes. To assist it in this process the Court has developed what is known as 'The Business Judgement Rule'. This rule acknowledges that directors, in running a business, have to make judgements about the future, and the fact that something different from what they had anticipated actually happened is no measure of culpability. To succeed a claimant has to show that the directors, at the time of making the judgement knew, or should have known, why their judgement was bound to be wrong. And this must be better than a probability. For example it is not good enough to show that it was probable that drug X would not be approved. If, however, approval had already been denied this would be another matter.

We recognise, of course, that GRIT is interested in stakeholder confidence not winning cases but, nevertheless, we think this example interesting as showing how lawyers have come to view the matter of predicting the future. Look again at the business plan. No one will say that it was 'wrong' because things turned out different, although, with hindsight, some may talk of optimism or pessimism.

But let us be clear: a business forecast should look to be accurate and it serves no purpose to produce a plan that, for example, is way below what might reasonably be expected. Indeed such an approach can be positively harmful as it can lead to resources being wrongly allocated. We are not suggesting that, because forecasting is difficult, right and wrong does not exist at all. Pension actuaries who failed to provide for falling interest rates and improving mortality have in no sense done a good job, however difficult that job may have been. The change in pension taxation rules is another matter.

Communicating Uncertainty or Managing Expectations?

There is always subjectivity in determining what is right and wrong and much of this has to do with expectations. There may be no such thing as a 'wrong' birthday present, for example, but from the standpoint of a child who wanted a train set but gets a bike, the bike is wrong.

This simple understanding seems to be missing from some parts of the GRIT thinking. For example, at 310 (b) (p32) we read the almost Orwellian statement that 'Some stakeholders believe that deterioration [in loss reserves] means that the original reserve estimate must have been wrong, rather than seeing it as just one realization from a distribution which happened to be above the mean' Well the reason why someone who thought that the original reserve estimate was going to be adequate and now, seeing it increased, thinks that it was wrong is because, in plain English, it was wrong. Let the CEO try trotting out the above quote to sceptical analysts and disappointed shareholders and we will see how well it goes down.

At 311 this line of thinking is developed further: 'This difference in understanding may be because actuaries have not focussed on communicating uncertainty in the past. However it also may be that our stakeholders, who generally have less technical training in the details of uncertainty, are not as familiar with some of the concepts as are actuaries'. The first sentence might be rewritten to say something along the lines that actuaries have been happy to give the impression of omniscience rather than admit that they didn't know what was going to happen either. The second sentence is rather akin to the sales manager suggesting that the CEO's disappointment with the undershoot in sales is due to his having less familiarity with the sales process than one who has been trained to it. The reason why people get upset when things turn out worse than was expected has nothing to do with technical training: it is because they are human.

'Blessed are they that do not hope, for they shall not be disappointed' runs the biblical variant, and this underlines clearly that life is all about expectations and that we practice managing the expectations of others all the time. Actuaries in this respect are no different from the CEO having to manage the expectations of shareholders (many of whom will have virtually no understanding of the business) and analysts, or the underwriter having to deal with a market in which expected pricing levels could not be achieved.

Everyone understands uncertainty and it is a human trait to seek certainty in an uncertain world. CEOs and CFOs are human too and it is this human characteristic that actuaries, and others, need to manage. A start might be to acknowledge up front that, like all professions, actuaries have their limitations and that none of us is prescient.

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