

## **Promoting Actuarial Quality - Drivers of Actuarial Quality:**

### *Reliability and Usefulness of Actuarial Methods:*

- Undoubtedly actuaries should have good modeling skills and in particular be able to build useful models for diverse scenarios and complicated data sets. They should also be well versed in the statement that (as G. P. Box once said) “All models are wrong, but some are useful”.
- The reliability and usefulness of models being used can only be enhanced by more pooling of data between actuaries and companies (like that being done at present in general insurance by the ROC/GIRO Working Party). Such exercises would also lead to more model comparison and consequently more insight into good modeling skills.
- The profession might find it useful to issue guidelines for minimum documentation that might accompany the presentation of models to clients. These might include information with respect to software (and procedures) being used, availability of code and data for replication exercises, summary statements about the quality and fit of the model, and residual checks used. This might also serve to address the issue of “subjectiveness” in the decision to use a particular model in practice. This would essentially be some form of “model (or audit) trail”, and such an exercise would perhaps be more essential/useful in general insurance than in some other areas of actuarial practice.

### *Technical Skills of Actuaries:*

- It goes without saying that a key issue in insuring high quality technical skills for the profession is the caliber of the intake into the profession. The road to qualification of an actuary<sup>1</sup> in the UK (& Ireland) is very demanding and in many ways acts as a severe filter on entry into the profession. The high standards and challenging nature of the exams ensure that only trainees with excellent quantitative skills achieve fellowship status, and even then after typically 4-5 years of study on the job (post university).
- The (relatively) new emphasis on CPD organized by the profession is very important and it provides an opportunity for more and better links with other external bodies (such as universities, and government agencies like the National Statistics Board) and professions (such as the legal, accountancy and banking professions). These links should be nurtured and encouraged, and could be used more constructively to address the concern that some experienced actuaries are not keeping up with the latest technical methods.
- The profession has established many good links with universities (for example through its university liaison committee and syllabus committees for examinations), but most of this is of an educational nature. Perhaps the profession should make better use of these links by encouraging more co-operative research between universities and companies. This may and should entail making insurance data more available (with the usual confidentiality agreements) to researchers, and encouraging participation in joint seminars in both universities and companies.
- It is true that the profession is still male dominated, but (at least in Ireland) this is changing at a reasonable pace. Although the actuarial profession has (generally speaking) a justifiably high reputation, which attracts the attention of many young students with superior quantitative skills, more effort must be made in demonstrating and clarifying why it is an attractive profession for both males and females.

---

<sup>1</sup> "A Long Road", (with Donal McMahon), *The Actuary*, May 2006, Three Rivers Publications, pp 23-25.

- The training of an actuary is sometimes viewed as somewhat specialized, and although this is true to a certain extent, it should not be viewed as being a narrow one. Actuaries should have obtained a good foundation in economics, finance, financial mathematics, statistics and investment, as well as basic skills in accountancy and computer programming. I think actuaries should also have some basic knowledge of business law.
- On the job work experience for students has been extremely successful at two universities in Ireland (UCD and DCU). Students in the actuarial programmes at these universities spend 6-9 months in their third (and penultimate) year on actuarial or financially related work, and most of them return for their final year much more knowledgeable about the actuarial profession as well as seeing that it is an attractive profession involving much more than passing hard exams. A newly accredited programme at Queen's University in Belfast has incorporated a full year of work experience (also in year 3) into its programme. I feel that this type of work placement is extremely valuable for potential students and companies alike, and should be encouraged more in the UK. Work placement in particular can demonstrate to students the need to develop some skills that are hard to learn and/or assess in a classroom atmosphere, such as communication skills, teamwork, and the practical need for leaving audit and model trails.
- The increasing need and use of statistical (or mathematical) models in general insurance has become very clear. Many of the more modern statistical methods associated with such modelling involve the use of computer intensive methods such as bootstrapping, simulation, MCMC methods and other Bayesian techniques. Such skills are sometimes difficult to assess through the traditional exam process of written exams. The new university accreditation process introduced by the Institute/Faculty is welcome in that it addresses this issue in recognizing the value of continuous assessment.
- All actuaries, but particularly those in general insurance, should be well trained in communicating aspects of extreme events (leading to large claims and claim numbers), and perhaps more emphasis should be put on this delicate and difficult topic.

*Some comments of Philip J. Boland*  
Emeritus Professor of Statistics, UCD,  
Belfield, Dublin 4, Ireland

September 19, 2008