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GUEST EDITORIAL

By A. D. Wilkie

It is a privilege and a pleasure to have been asked to write the first Guest Editorial for *British Actuarial Journal*. It is the plan to follow this one with others, though not necessarily one in every part.

Many years ago I noticed that members of the Faculty were often not aware of what had been presented at Institute sessional meetings, and that (perhaps even more so) members of the Institute were not aware of what had been presented to the Faculty. I suggested to Faculty Council (of which I was then a member) that a joint journal would be a good idea. This suggestion got no support at the time, and I put it aside.

Some years later I found myself as the Institute Member of Council responsible for supervising *Journal of the Institute of Actuaries*, so I took the opportunity to suggest the idea again. This time the suggestion fell on fertile ground, since David Forfar, then the Faculty Honorary Editor, had the same idea, and co-operation between the Faculty and the Institute was the current theme.

Thus *B.A.J.* was born, a merger of *J.I.A.* and *Transactions of the Faculty of Actuaries*. Many sessional meetings papers were, in any case, being presented to both bodies, so there was some saving of duplication to put against the larger print runs, now exceeding 13,000. The differences between *J.I.A.* and *T.F.A.* were small, and we compromised on using the layout of *J.I.A.* and the customary spellings of *T.F.A.* (e.g. -ise rather than -ize, -ction rather then -xion, 0.5 rather than .5).

In my view, *B.A.J.* has been a success. All members of the British professional bodies now have the opportunity to read all papers presented to both bodies. Of course, I have no control over whether they do, in fact, read them.

B.A.J. is now in its seventh year of publication. I had the honour to be the Chairman of the joint Journal Committee for the first four years, a post now filled admirably by Professor Angus Macdonald. Both of us have had the good fortune to have an excellent Editor in Doreen Hart, whose attention to detail would be described as pedantic, if such a quality were not a great virtue in an Editor.

I am not so happy, however, about the changed design of the front cover. In my view, an organisation should change its visual image slowly, and keep it up to date gradually. The symbol of Shell Oil is a good example of such creeping change. It is only if one wishes to announce a break in continuity that one should have a radical change of design. The change from *J.I.A.* and *T.F.A.* to the combined *B.A.J.* was such a change, and the owls and

woolsacks design was symbolic of the two professional bodies. There was no need for a change after only five years, and the new cover has no obvious symbolic interpretation.

There has been a flow of good quality papers submitted to *B.A.J.*; these are papers that have not been presented to a sessional meeting, but have gone through a rigorous refereeing process. This irritates authors who would like to see their work published quickly, but it ensures that what is published is of a high standard. I am in this position myself, having submitted a paper, not so long ago, and having found that the referees' comments made me aware of a flaw in my methodology which I still need to correct.

Many submitted papers and several sessional meeting papers so far published in *B.A.J.* relate to what I consider to be the greatest intellectual challenge facing the actuarial profession at present: the relationship between traditional actuarial methodology and the methods of financial economists. In my view, there should be no conflict between these methodologies. Just as there should be no difference between the mathematics used by actuaries and that used by mathematicians, or between the statistical methods used by actuaries and those used by statisticians, so the mathematical and statistical methods applied to investments should be the same for actuaries, economists and investment specialists.

That does not prevent there being differences in approach. Some mathematicians like to find analytical closed form solutions to any problem, and may consider Monte Carlo simulation methods to be an admission of failure. Statisticians may be entirely happy with using simulation methods to solve practical problems. Economists may be interested in how the whole economy works, and seek global equilibrium models. Actuaries may be content with locally satisfactory models that suit the needs of their clients.

However, the apparent conflict between actuaries and financial economists seems to go deeper than this. I can see good and bad on both sides of the fence. There are some actuaries who seem to see no need to change their traditional methods, nor to bother with an understanding of, say, option pricing. Not recognising the options involved in guaranteed annuity rates, and consequently neither pricing nor reserving adequately for these options, seems to have cost a distinguished old mutual life office its independence.

At the other extreme, I have seen mathematical papers discussing, in great detail and with elaborate mathematics, the characteristics of, say, single factor interest rate models, regardless of the fact that such models do not represent any actual fixed-interest market. Such models have great pedagogical use, and may reflect certain markets locally, but, if the more sophisticated practical actuaries feel that such financial mathematics offers them nothing, then I am not too surprised. On the other hand, single factor yield curve models are a significant step better than the traditional actuarial model of one interest rate for all terms and all time.

There are models for courses; an elaborate interest rate model may not matter for the pricing of share options, but would be essential for pricing long-term interest-rate derivatives. Likewise, what has become known as 'the Wilkie Model' is intended for long-term stochastic simulation exercises, and was not intended for pricing derivatives, though it could be used for that purpose to some extent. All models are only an approximation to reality, and the required complexity depends on the job in hand.

Then there are the actuaries who have learnt a little financial economics, but have not drunk sufficiently deeply from the Pierean spring. This leads to statements like: shares have a higher expected return than bonds, but this higher return exactly (and by implication for all investors) compensates for the extra risk. This seems to me to misinterpret the linear relationships in the Capital Asset Pricing Model which apply to the market as a whole (in equilibrium), as if they applied to each individual investor, whereas the individual investor applies his utility function to balance the trade-off between risk and return, and is not indifferent to the level of risk he undertakes.

There are also those who seem to think that option pricing theory ended with the Black-Scholes formula, and are unaware of the massive developments since then, especially in the field of incomplete markets, which is what characterises insurance and pension liabilities. Much has been done, but there is still much to do in this area.

On the other side, there seem to be financial economists who are happy to substitute an annuity certain for the expectation of life for a life annuity, or to treat mortality rates as constant for all ages; both of these are approximations that may serve a particular purpose, but are not generally adequate.

More importantly, many actuaries are aware that contingency reserves are needed to protect risky portfolios, and that, even if one hedges a portfolio of assorted options to the best of one's ability, there will be some mismatching risk, partly because one cannot hedge costlessly and instantaneously, partly because the real world processes are not continuous Brownian motions, and may experience jumps. Most practitioners in the options world are also aware of these risks, and do not run risky portfolios with no capital, but the necessary or desirable amount of capital backing, how one rewards it adequately, and how one charges in order to pay for the use of the capital, seem to have received no more attention among financial economists than among actuaries.

However, some members of the actuarial profession have done themselves no favours by forgetting to emphasise the need for contingency reserves, and for describing what I think should be treated as contingency reserves, or as the nest egg set aside for a rainy day (to mix one's metaphors), as 'free assets' or 'the orphan estate'. This terminology may have encouraged shareholders, carpetbaggers and journalists to believe that these funds are not really

necessary for the good management of a life office or, indeed, of any insurance business, and so can safely be distributed as windfalls to policyholders or shareholders. It is possible that no adverse results will arise from such distributions; the rainy day may not arise; in spite of their still remarkably high present levels, share prices may not collapse to more realistic levels for a long time.

I might think that my house will not have a fire, so, if I do not effect fire insurance I may save myself quite a lot in insurance premiums. But what if I am wrong? It reminds me of the long story that ends up with the petition: "Lord, Lord, we didna ken." and the loving and merciful response: "Well, ye ken noo."

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