

EDITORIAL AND ANNOUNCEMENTS

GUEST EDITORIAL

At the ASTIN Colloquium in Cambridge Willem de Wit has left the ASTIN Committee which he has served for many years. The editors have therefore invited him to write a Guest Editorial reflecting his thinking and his great experience from which ASTIN has profited over decades. We are happy that he has accepted this task.

THE EDITORS

ACTUARIAL SCIENCE

PAST – PRESENT – FUTURE

The concept of insurance is very old, if tradition is to be believed. Already in ancient times we find traces of insurance business.

Obviously we are talking about risks, and it is well known that already the Asipus collected data to describe risks and to point the way how to cope best with these risks. One could say that this was a very first start of risk management. Their description of risks was mainly based on concepts like certainty, trust and expertise (which we fundamentally still acknowledge today), while even religious considerations were taken into account. Good as well as bad results were recognized, but the concept of probability was unknown to them.

The roots of thoughts on probability we find at Aristoteles, but for the development of the concept of probability we have to wait until the 16th century, when Cardano (1565) wrote his ideas about that concept, while the final breakthrough was realised by Pascal and Fermat (1654) and Huygens (1657).

LIFE

Then the time was ripe for the first actuarial activity: John Graunt (1662), Johan de Witt (1671) and Edmond Halley (1694) made a mortality table. They used data which were taken from censuses. For the sale of annuities (among others) they used this historical material. For the time being they had to manage with different, uncertain sources, until the 19th century when regular censuses started, from which up-to-date mortality tables could be derived.

In fact life insurance mathematics has always been very simple and the invention of commutation columns can be seen as the most important invention in life insurance mathematics. Recently the complexity has, also because of the use of computers, increased very much, on the one hand because of the application of stochastic techniques, on the other hand because of asset-liability-management.

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NON-LIFE

For the non-life branch we had to wait somewhat longer. Not only was there no data for a long time, but also the theory started later. If we consider the work of Lundberg (1909) as the start of actuarial activities in the field of non-life insurance, then we can't yet celebrate the centenary.

Still in 1940 the application of the theory of probabilities was described as doubtful. After the Second World War non-life insurance business became more important, and theories developed further, in which automobile insurance acted as a pioneer. However observational data still remained scanty and often one had to deal with limited samples. In contrast with life insurance, where only a simple two-dimensional development (mortality table) exists, non-life insurance moved quickly on to econometrical models, where numerous variables play a role. Still today one has to conclude that a number of fields of non-life insurance business are even yet very difficult to handle.

OBSERVATIONAL DATA

It appears very hard in many Countries to collect the adequate observational data and it is remarkable that sometimes for practical application one has to make use of old data, even sometimes from other countries.

Slowly but surely this situation improves, but considering the coming of bigger and open markets, especially in Europe, it is very important to collect the adequate observational data. It is also necessary to be sure that the data are mutually comparable.

FUTURE

In the succession of mortality tables actuaries notices soon a decline of mortality. First they tried to find an "explanation" for this, on the base of Newtonian determinism, but that failed. The consequences of a further decline of mortality are becoming more and more apparent, because of the recent shift from insurances of death risk to insurances with a long life risk. Yet it appears impossible in any reliable way to make a good forecast of future mortality. And that is just what we need. Also in non-life insurance this forecasting plays an important role. Next to the process of inflation, one could also think of, for example, a changing risk structure, but also of changing legal and social views.

Now that developments in the world are happening rapidly, so also are risks, the basis of insurance, evolving at the same rapid pace. But all our observational data come from the past. There are too few attempts that try to make a forecast for the future. If this is already being done, it is often not much more than the continuation of an observed trend from the past. Popper once wrote that a forecast in social science is in principle impossible (in my opinion we should conceive actuarial science as a social science). He warns particularly against assuming a continuation of what happened in the past into the future. The elaboration of scenarios in which the parameters of the model can be changed in different ways seems to be an obvious alternative.

SOCIETY

Actuarial science becomes more and more socially involved. Because of the fact that in many countries the government is partly withdrawing from social insurance, private insurance companies are confronted with new problems, like affordability, obligatory acceptance, and so on, in short, with problems of solidarity.

WHERE TO?

Besides further development of the theory, in my opinion actuarial science in the future has especially to be working on:

- collecting the adequate data, mutually comparable,
- developing scenarios for the future to forecast the consequences for the future,
- considering life, non-life and financial services as one and the same branche,
- social problems.

One must search for the greatest possible simplicity with regard to the above, both for our own practice as well as for those countries where the concept of insurance is not yet so far developed. After all they have to join in too.

G. W. DE WIT