IFM as a flexible and validated tool for stochastic loss reserving

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In the last few years, we have been actively involved with Posthuma Partners to develop a stochastic model for run off tables of insurance companies, and creating useful and statistically sound tools for determining prediction, loss reserving, cost of capital estimates and many other characteristics, based on this underlying statistical model. All these results have been integrated into the software tool IFM.

Loss reserving has always been at the heart of the insurance business, and using run off tables to predict future losses has been done for a long time, most notably by variants of the chain ladder. However, these methods are mostly arithmetic in nature, and not based on an underlying, full stochastic model. In light of Basel Solvency II and recent IFRS, these older methods are becoming unacceptable. It is therefore essential for an insurance company to base its loss reserving, cost of capital estimates, etc., on a validated stochastic model. This is exactly the reason why we have developed IFM.

There have been several papers describing the model underlying IFM, most notably [2], which was published in the CAS e-forum and has been cited 19 times in other scientific papers (Google Scholar). Other papers are [3, 1]. Also, we have given several presentations at scientific meetings about IFM, such as CAS and ASTIN. In these papers and presentations we describe the model, explain the methodology, and perform validations on real and simulated data.

As scientists working in statistics, and having a lot of experience with statistical models and real data, we feel that IFM is a valuable and flexible tool for insurance companies to analyse their business, which is based on sound and state-of-the-art statistical methodology.

References

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[2] B. Posthuma, E. A. Cator, W. Veerkamp, and E. van Zwet. Combined analysis of paid and incurred losses. *Casualty Actuarial Society E-forum Fall 2008*, 2008.

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[3] P. ter Berg. Nonlinear normal correlated loss array. *ASTIN Topic: Dynamic Financial Analysis*, 2001.