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A generalized linear model with smoothing effects for claims reserving

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Abstract

In this paper, we continue the development of the ideas introduced in England & Verrall (2001) by suggesting the use of a reparameterized version of the generalized linear model (GLM) which is frequently used in stochastic claims reserving. This model enables us to smooth the origin, development and calendar year parameters in a similar way as is often done in practice, but still keep the GLM structure. Specifically, we use this model structure in order to obtain reserve estimates and to systemize the model selection procedure that arises in the smoothing process. Moreover, we provide a bootstrap procedure to achieve a full predictive distribution.

Key words: Bootstrap, Generalized linear model, Model selection, Smoothing, Stochastic claims reserving

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