

# **Bayesian Approach for Prediction Error in Chain-Ladder Claims Reserving**

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## **Abstract**

Bayesian approach is applied to calculate the prediction error in chain ladder claim reserving. The philosophy of Bayesian approach to prediction error is first introduced and compared with Frequentist approach. All parameters in the model are then estimated by Bayesian approach, where three types of prior distributions are used. Posterior distribution could be standard student t-distribution and inverse Gamma distribution under non-informative and conjugate prior distribution. Finally, theory is illustrated by numerical examples. It concludes that prediction error by Bayesian approach is much higher than that by Frequentist approach.

**Keywords.** Bayesian approach; Prediction error; Chain ladder; Reserving; Student t distribution; Inverse Gamma distribution.