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Optimizing method selection for IBNR-reserve calculation using machine learning

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Abstract

This work implements an approach which were introduced by Caesar Balona & Ronald Richman in their article *The Actuary and IBNR Techniques: A Machine Learning Approach* (2021), that combines the strengths of both traditional and machine learning reserving methods. This approach is still based on the ordinary reserving methods available today, such as chain ladder and the Bornhuetter–Ferguson method, with the modification that we vary how the loss development factors are estimated and included/excluded. This is done using AvE and CDR as score tests. The estimated reserves using the machine learning approach were then compared to corresponding reserves using the standard methods. The outcome showed that the ordinary reserving methods, especially the chain ladder method, overall performed better, even though we sometimes gained better results using the new approach.

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