

INTISARI

ESTIMASI CADANGAN KLAIM MENGGUNAKAN COPULA ARCHIMEDEAN DAN METODE *CONDITIONAL LEAST SQUARE*

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Estimasi cadangan klaim memegang peranan penting dalam suatu perusahaan asuransi. Cadangan klaim untuk mengantisipasi adanya klaim yang belum terselesaikan. Estimasi cadangan klaim pada penelitian ini menggunakan Copula Archimedean dan metode *Conditional Least Square*, yaitu melibatkan Model *Conditional Mean and Variance* untuk memodelkan cadangan klaim dimana eror pada Model *Conditional Mean and Variance* dipakai untuk memodelkan dependensinya dengan bantuan copula sehingga diperoleh nilai estimasi cadangan klaim. Estimasi cadangan klaim menggunakan Copula Archimedean dan metode *Conditional Least Square* akan diaplikasikan pada data klaim asuransi tanggung gugat. Data klaim tersebut disajikan pada segitiga *run-off* sebagai data input untuk proses analisis. Sebagai hasil, semakin kecil standar error yang diberikan oleh metode, semakin akurat estimasi parameter yang diberikan, dengan kata lain estimasi yang diberikan oleh metode *Conditional Least Square with Copula* memberikan hasil yang lebih baik dibandingkan metode *Bootstrap Chain Ladder*. Selain menggunakan standar error, perbandingan *Bootstrap Chain Ladder* dan *Conditional Least Square with Copula* juga menggunakan grafik, yaitu memperlihatkan varian *Conditional Least Square with Copula* lebih kecil dari varian *Bootstrap Chain Ladder*.

Kata kunci : Cadangan Klaim, Segitiga *Run-Off*, Model *Conditional Mean and Variance*, Copula Archimedean, Dependensi Eror, *Conditional Least Square*, *Bootstrap Chain Ladder*

ABSTRACT

CLAIM RESERVES ESTIMATION USING ARCHIMEDEAN COPULAE AND CONDITIONAL LEAST SQUARES METHOD

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Claim reserves estimation plays an important role in insurance company. A claim reserve is aimed at anticipating any outstanding claim. In this research, estimation of the claim reserves was conducted using Archimedean Copula and Conditional Least Square method. A Conditional Mean and Variance Model was involved in the modelling, particularly in the estimation of claim reserve by understanding the dependence of marginal distribution on the copula. This dependence was modeled based on the error in the Conditional Mean and Variance Model. Claim reserves estimation in this research was applied to the claims data of general liability insurance presented in run-off triangles. This research suggested that the smaller the standard error given by the method, the more accurate the estimation. In other words, the estimation provided by Conditional Least Square with Copula method gives better results than that given by Bootstrap Chain Ladder method. The results also showed that the variance of Conditional Least Square with Copula is smaller than that of Bootstrap Chain Ladder.

Keywords : Claim Reserves, Run-Off Triangle, Conditional Mean and Variance Model, Archimedean Model, Error Dependence, Conditional Least Square, Bootstrap Chain Ladder