

INTISARI

Optimal Risk Sharing dalam Reasuransi Quota Share–Excess of Loss dengan Entropic Value at Risk dan Social Expected Utility

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Dalam praktik reasuransi, penentuan struktur kontrak yang optimal menjadi penting untuk menyeimbangkan kebutuhan pengendalian risiko kerugian ekstrem dengan efisiensi ekonomi bagi asuradur dan reasuradur. Khususnya, kombinasi kontrak reasuransi proporsional dan nonproporsional sering digunakan untuk mengelola volatilitas klaim sekaligus membatasi eksposur terhadap risiko ekor. Dalam skripsi ini dibahas mengenai penentuan premi dan retensi optimal pada kombinasi kontrak reasuransi *quota share* (QS) dan *excess of loss* (XoL) dengan mempertimbangkan kepentingan asuradur dan reasuradur secara simultan. Analisis dilakukan menggunakan pendekatan *social expected utility* (SEU) untuk merepresentasikan kesejahteraan bersama, serta *entropic value at risk* (EVaR) untuk mengendalikan risiko kerugian ekstrem yang dihadapi asuradur. Premi reasuransi ditentukan berdasarkan prinsip ekuivalensi sehingga bersifat adil secara aktuarial. Hasil penerapan model pada data klaim empiris menunjukkan bahwa kombinasi kontrak QS dan XoL dapat meningkatkan utilitas asuradur melalui pengurangan risiko kerugian besar, sementara utilitas reasuradur relatif tidak meningkat karena tidak adanya tambahan premi berbasis risiko. Hasil ini menunjukkan bahwa reasuransi berfungsi terutama sebagai mekanisme transfer dan mitigasi risiko, serta bahwa pendekatan SEU mampu menghasilkan struktur kontrak yang seimbang dan berkelanjutan bagi kedua pihak.

ABSTRACT

Optimal Risk Sharing in Quota Share–Excess of Loss Reinsurance under Entropic Value at Risk and Social Expected Utility

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In reinsurance practice, determining an optimal contract structure is essential to balance the control of extreme loss risk with economic efficiency for both insurers and reinsurers. In particular, the combination of proportional and non-proportional reinsurance contracts is commonly employed to manage claim volatility while limiting exposure to tail risk. This thesis examines the determination of optimal premiums and retention levels in a combined quota share (QS) and excess of loss (XoL) reinsurance contract by simultaneously considering the interests of both the insurer and the reinsurer. The analysis adopts a social expected utility (SEU) framework to represent joint welfare, while entropic value at risk (EVaR) is employed to control the insurer's exposure to extreme loss risk. Reinsurance premiums are determined based on the equivalence principle, ensuring actuarial fairness. The application of the proposed model to empirical claims data shows that the combination of QS and XoL contracts increases the insurer's utility through a reduction in large-loss risk, while the reinsurer's utility does not exhibit a significant increase due to the absence of additional risk-based premium loading. These findings indicate that reinsurance primarily functions as a risk transfer and risk mitigation mechanism, and that the SEU approach is capable of producing a balanced and sustainable contract structure for both parties.