Kontrak Reasuransi Optimal dengan Joint Survival Probability dan Joint Profitable Probability = Optimal Reinsurance Contract under Joint Survival Probability and Joint Profitable Probability

Muchammad Adrian Firmansyah, author

Abstrak

Dalam upaya untuk meminimalkan kerugiannya, perusahaan asuransi dapat mengalihkan sebagian risiko yang ditanggungnya kepada perusahaan reasuransi. Terdapat dua kontrak reasuransi yang biasa digunakan untuk mengalihkan risiko tersebut, yaitu kontrak reasuransi quota-share dan kontrak reasuransi stop-loss. Pembagian kerugian pada kontrak reasuransi quota-share bergantung pada retensi yang berupa nilai proporsi kerugian yang disetujui kedua pihak, sedangkan pada kontrak reasuransi stop-loss pembagian kerugian bergantung pada batas retensi berupa besar kerugian maksimum yang ditanggung oleh perusahaan asuransi. Perusahaan asuransi membayarkan premi reasuransi kepada perusahaan reasuransi sebagai imbalan atas pengalihan risiko tersebut. Semakin besar risiko yang dialihkan kepada perusahaan reasuransi, semakin besar pula premi reasuransi yang harus dibayarkan oleh perusahaan asuransi. Perusahaan asuransi harus menentukan retensi yang optimal sedemikian sehingga premi reasuransi yang dibayarkan sesuai dengan kerugian yang dialihkan kepada perusahaan reasuransi. Pembentukan kontrak reasuransi yang optimal biasanya hanya dilihat dari sisi perusahaan asuransi tanpa mempertimbangkan sisi perusahaan reasuransi. Untuk mengatasi masalah tersebut dilakukan perhitungan menggunakan joint survival probability dan joint profitable probability. Dengan menggunakan joint survival probability dan joint profitable probability, kontrak reasuransi yang optimal baik bagi perusahaan asuransi maupun perusahaan reasuransi dapat diperoleh. Pada perhitungan dengan joint survival probability, kontrak reasuransi quota-share optimal bergantung pada kekayaan awal perusahaan asuransi dan nilai kerugian yang ditanggung perusahaan asuransi apabila perusahaan asuransi mengalihkan seluruh kerugian kepada perusahaan reasuransi, sedangkan kontrak reasuransi stop-loss optimal bergantung pada kekayaan awal perusahaan asuransi dan premi yang dibayarkan pemegang polis. Pada perhitungan dengan joint profitable probability, kontrak reasuransi quota-share optimal bergantung pada nilai kerugian yang ditanggung perusahaan asuransi apabila perusahaan asuransi mengalihkan seluruh kerugian kepada perusahaan reasuransi, sedangkan kontrak reasuransi stop-loss optimal bergantung pada premi yang dibayarkan pemegang polis.
.....In an effort to minimize losses, the insurance company may transfer some of the risk it bears to the reinsurance company. There are two reinsurance contracts that are commonly used to transfer the risk, namely the quota-share reinsurance contract and the stop-loss reinsurance contract. Loss sharing in a quota-share reinsurance contract depends on the retention in the form of the proportion of losses agreed upon by both parties, whereas in a stop-loss reinsurance contract, the distribution of losses depends on the retention limit in the form of the maximum loss incurred by the insurance company. The insurance company pays a reinsurance premium to the reinsurance company in exchange for the transfer of risk. The greater the risk transferred to the reinsurance company, the greater the reinsurance premium that must be paid by the insurance company. The insurance company must determine the optimal retention in such a way that the reinsurance premium paid matches the loss transferred to the reinsurance contract. The retention is usually only seen from the side of the insurance company without considering the reinsurance company. To

overcome this problem, the optimal retention calculations in this paper are carried out using a joint survival probability and a joint profitable probability. By using joint survival probability and joint profitable probability, optimal reinsurance contracts for both insurance companies and reinsurance companies can be obtained. In calculations with joint survival probability, optimal quota-share reinsurance contract depends on the initial wealth of the insurance company and the value of the losses incurred by the insurance company if the insurance company transfers all losses to the reinsurance company, while the optimal stop-loss reinsurance contract depends on the initial wealth of the insurance company and premiums paid by policyholders. In calculations with a joint profitable probability, the optimal quota-share reinsurance contract depends on the value of the losses incurred by the insurance company if the insurance company transfers all losses to the reinsurance company, while the optima stop-loss reinsurance contract depends on the premium paid by the policyholder.