Pengukuran Operational Value at Risk Risiko Gempa Bumi dengan Metode Loss Distribution Approach-Aggregation Model di Indonesia = Measurement of Operational Value at Risk of earthquake Using Loss Distribution Approach- Aggregation Model in Indonesia

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Abstrak

Gempa bumi dapat menimbulkan dampak yang cukup besar, baik dalam hal besarnya nilai kerugian maupun luasnya wilayah terdampak. Implikasi keuangan dari gempa bumi besar dapat memiliki efek jangka panjang. Oleh karena itu, perusahaan perlu memahami karakteristik dari kejadian gempa. Penelitian ini mengukur Operational Value at Risk (VaR) untuk klaim asuransi gempa bumi menggunakan data sesi statistik (MAIPARK) tahun 2014-2021. Perhitungan risiko operasional dengan model Loss Distribution Approach-Aggregation (Monte Carlo Simulation) bertujuan untuk memperkirakan perkiraan cadangan modal berdasarkan distribusi frekuensi dan distribusi keparahan data historis. Hasil penelitian menunjukkan bahwa distribusi frekuensi kerugian klaim asuransi gempa bumi mengikuti pola distribusi geometrik, sedangkan distribusi keparahan menunjukkan pola distribusi eksponensial. Dengan tingkat kepercayaan 95%, nilai VaR risiko operasional adalah Rp 2.792.721.528.565,80, dan uji validitas atau backtesting menggunakan uji Kupiec dengan satu kesalahan, dan model dapat diterima.

.....Earthquakes may cause a considerable impact, both in loss and the area. The financial implications of a major earthquake can have a long-lasting effect. Therefore, companies need to understand the essential characteristics of earthquake events. This research measures the Operational Value at Risk (VaR) for claim catastrophe Insurance using statistical session (MAIPARK) data for 2014-2021. Calculation of operational risk with loss distribution approach aggregation model (Monte Carlo Simulation) aims to estimate capital reserve estimates based on the frequency distribution and severity distribution of historical data. The results showed that the frequency distribution of earthquake insurance claim losses followed a geometric distribution pattern, while the severity distribution showed an exponential distribution pattern. With a 95% confidence level, the operational risk VaR value is IDR 2,792,721,528,565.80, and the validity test or backtesting uses the Kupiec test with one error, and the model is acceptable.