Abstract

In this final project discussed about modeling and simulation of bankruptcy opportunity of insurance company, when bear the claim from customer. The claim frequency is assumed to be Poisson distributed and the claim size is assumed to be Pareto distributed. The insurer has the funds to pay claims earned from the accumulated reserves of the initial fund, and the insurance company's income from premium payments by insurance customers. If the insurance company's fund reserves at time t is less or equal to 0, then the insurance company went bankrupt. Therefore it will be analyzed the exact premium value to be paid by insurance customers. The larger the premium paid, the greater the insurance company's reserve at the time t to bear the next claim. In terms of calculating the insurance company's fund reserves, a simulation is performed with the assumption of a fund reserve of Rp 10,000,000,000 and premium rate of Rp 3000 to Rp 4100. Based on the test results, the analysis obtained is a premium of Rp.4100, then the chance of bankruptcy insurance company is 0 with an average reserve fund of Rp.67.668.738.046. While using Exponential distribution of the results obtained if the premium Rp.3900 per day, then the chances of bankruptcy 0, but the average value of fund reserves ultimately still smaller than the Pareto distribution, with insurance company profit is Rp28.842.181.773 with the ratio of premium value the same one.

Keywords: Bankruptcy Probability, Pareto Distribution, Poisson Distribution, Premiums.