STOCHASTIC COMPARISONS OF THE LARGEST CLAIM AMOUNTS FROM TWO SETS OF INTERDEPENDENT HETEROGENEOUS PORTFOLIOS

Hossein Nadeb, Hamzeh Torabi and Ali Dolati

Abstract. Let $X_{\lambda_1}, \ldots, X_{\lambda_n}$ be continuous and dependent non-negative random variables and $Y_i = I_{p_i}X_{\lambda_i}$, $i = 1, \ldots, n$, where $I_{p_1}, \ldots, I_{p_n}$ are independent Bernoulli random variables independent of $X_{\lambda_i}$’s, with $\mathbb{E}[I_{p_i}] = p_i$, $i = 1, \ldots, n$. In actuarial sciences, $Y_i$ corresponds to the claim amount in a portfolio of risks. In this paper, we compare the largest claim amounts of two sets of interdependent portfolios, in the sense of usual stochastic order, when the variables in one set have the parameters $\lambda_1, \ldots, \lambda_n$ and $p_1, \ldots, p_n$ and the variables in the other set have the parameters $\lambda_1^*, \ldots, \lambda_n^*$ and $p_1^*, \ldots, p_n^*$. For illustration, we apply the results to some important models in actuary.


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REFERENCES


