Some Asymptotic Results for Sums of Dependent Random Variables with Actuarial Applications

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Abstract

This paper establishes some asymptotic results for sums of dependent random variables, in the presence of heavy-tailedness conditions. We demonstrate how the derived results can be used to approximate functionals of sums of dependent random variables for which the analytic expression is too cumbersome to work with and which are of major importance in actuarial applications. Numerical illustrations are provided to assess the quality of the asymptotic approximations.

Keywords: Asymptotics, Heavy-tailed distributions, Sums of random variables, Stochastic dependence

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