

The discounted aggregate claims and dividends and their relationships

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Abstract

In this talk, we propose a generalization of the Gerber-Shiu expected discounted penalty function, which allows us to analyze jointly the discounted aggregate claim amounts until ruin and the discounted total dividends until ruin. These two quantities are of great importance as they respectively represent the insurer's payments to its policyholders and shareholders, but in the literature they are often studied separately. Some exact results for the generalized Gerber-Shiu function are discussed. Numerical examples involving the covariances between any two of (i) the discounted aggregate claims until ruin; (ii) the discounted dividend payments until ruin; and (iii) the time of ruin are presented along with some interpretations. This is joint work with Eric C.K. Cheung and Haibo Liu.

Keywords: Discounted aggregate claims until ruin; Discounted dividend payments; Covariance; Gerber-Shiu function.