

A ratcheting dividend strategy in risk theory

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Abstract

We study a general spectrally-negative Lévy insurance risk model with dividends where once during the lifetime of the risk process the dividend rate can be increased. Formulas for the resulting expected discounted dividend payments until ruin and the expected ruin time are derived. It is shown that for the special case of a diffusion approximation the optimal barrier for the ratcheting strategy is characterized by an unexpected relation to the case of refracted dividend payments. We also discuss the performance of this type of dividend strategy through numerical illustrations.

Keywords: Risk theory, Dividend payments, Collective risk model, Spectrally Negative Lévy Processes, Optimal Dividends.

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