

Optimal ratcheting of dividends in insurance

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In this talk, we give an overview of recent developments in identifying optimal dividend payment strategies for an insurance company, when the dividend rate is not allowed to decrease. The optimality criterion here is to maximize the expected value of the aggregate discounted dividend payments up to the time of ruin. In the framework of the classical risk model and its Brownian approximation, the solution of the corresponding two-dimensional optimal control problem is presented and optimal strategies are numerically determined for several concrete examples.

The implementations illustrate that the restriction of ratcheting does not lead to a large efficiency loss when compared to the classical unconstrained optimal dividend strategy. We also consider an extension of the results to drawdown constraints on the dividend rate, where a curious square-root rule emerges.