

Cheung, Eric C. K.

A generalized penalty function in Sparre Andersen risk models with surplus-dependent premium. (English) Zbl 1229.91157

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The paper focuses on the surplus process of an insurance company, which is modeled as a generalized Sparre Andersen risk model with surplus-dependent premium rate. This assumption allows to obtain a twofold goal: maintaining a competitive level of premiums in case of higher surplus, as well as charging prudential higher premiums in case of insufficient funds.

Firstly, the generalized Gerber-Shiu function is derived by means of a transition function which is independent of the penalty function. Furthermore, properties of this last function are obtained under the assumption of a constant premium, or in the case of a threshold dividend strategy, or considering credit interest.

Some extensions are discussed within an absolute ruin model with debit interest.

Reviewer: [Emilia Di Lorenzo \(Napoli\)](#)

MSC:

91B30 Risk theory, insurance (MSC2010)

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