

**Drekic, Steve; Woo, Jae-Kyung; Xu, Ran**

**A threshold-based risk process with a waiting period to pay dividends.** (English)

Zbl 1412.60064

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**Summary:** In this paper, a modified dividend strategy is proposed by delaying dividend payments until the insurer's surplus level remains at or above a threshold level  $b$  for a predetermined period of time  $h$ . We consider two cases depending on whether the period of time sustained at or above level  $b$  is counted either consecutively or accumulatively (referred to as standard or cumulative waiting period). In both cases, we develop a recursive computational procedure to calculate the expected total discounted dividend payments made prior to ruin for a discrete-time Sparre Andersen renewal risk process. By varying the values of  $b$  and  $h$ , a numerical study of the trade-off effects between finite-time ruin probabilities and expected total discounted dividend payments is investigated under a variety of scenarios. Finally, a generalized threshold-based strategy with a delayed dividend payment rule is studied under the compound binomial model.

**MSC:**

60G50 Sums of independent random variables; random walks

60K05 Renewal theory

91B30 Risk theory, insurance (MSC2010)

62P05 Applications of statistics to actuarial sciences and financial mathematics

**Keywords:**

discrete-time sparre Andersen renewal risk process; threshold strategy; waiting period; dividend payments; ruin probabilities; Parisian-type model; compound binomial model

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