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How long is the surplus below zero? (English) Zbl 0777.62096
Insur. Math. Econ. 12, No. 1, 23-38 (1993).

For the classical compound Poisson continuous-time surplus process the following evaluations are considered: duration of the first negative surplus, duration of any other negative surplus, total duration of negative surplus.

The author develops the Gerber model [*H. U. Gerber*, *Insur. Math. Econ.* 9, No. 2/3, 115-119 (1990; [Zbl 0731.62153](#))], using his martingale method. The symmetry between the distributions of time of ruin and duration of a negative surplus is discussed for the zero initial surplus. Finally, the author presents two examples, considering exponential and gamma $(2, \beta)$ distributions.

Reviewer: [L.S.Ioffe \(Haifa\)](#)

MSC:

62P05 Applications of statistics to actuarial sciences and financial mathematics Cited in 47 Documents

Keywords:

moment generating function; individual claim amount distributions; compound geometric distribution; severity of ruin; probability of ruin; exponential distributions; gamma distributions; compound Poisson continuous-time surplus process; first negative surplus; total duration of negative surplus; Gerber model; martingale method; distributions of time of ruin; zero initial surplus

Software:

[Mathematica](#)

Full Text: [DOI](#)

References:

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