

On the density of the time to ruin in dependent Sparre Andersen models with Coxian claims

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Abstract

The joint density of the time to ruin and the deficit at ruin is studied under a general class of dependent Sparre Andersen models with Coxian claim sizes. An explicit form of this joint density is obtained by inverting the joint Laplace transform of the time to ruin and the deficit at ruin. Applications of this result are also discussed. For example, the joint moments of the time to ruin and the deficit at ruin may be obtained from this joint density.

Keywords: dependent Sparre Andersen models; joint density; time to ruin; deficit at ruin; Coxian claim sizes

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