

Gerber-Shiu dynamic risk measures for solvency evaluation

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Abstract: Solvency II requires insurance companies to hold *solvency capital requirements (SCR)* to cover unpredictable and critical downside risks for the companies. Evaluating those risks that vary over time, it would be natural to use a continuous time risk model, and “Risk Theory” would give us a solution. Recently Gerber-Shiu’s ruin analysis are developing since the paper by Gerber and Shiu (1998), and many ruin-related quantities are computable via Gerber-Shiu functions as well as its finite-time versions. Since the SCR is to prevent the ruin of an insurance company for a certain period, the risk would be written naturally by finite-time Gerber-Shiu functions. In this paper, we propose a dynamic risk measure based on a finite-time Gerber-Shiu functions, which is a map defined on a D -space (a family of risk processes on compacts), and discuss the properties to be required; *monotonicity, cash invariance, positive homogeneity*, etc. with respect to risk processes.