The fundamental definition of the Solvency Capital Requirement in Solvency II

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Abstract: It is essential for insurance regulation to have a clear picture of the risk measures that are used. We compare different mathematical interpretations of the Solvency Capital Requirement (SCR) definition that can be found in the literature. We introduce a mathematical modeling framework that allows us to make a mathematically rigorous comparison. The paper shows similarities, differences, and properties such as convergence of the different SCR interpretations. Particular emphasis is placed on the choice of the discount factor in the SCR definition. Moreover, we generalize the SCR definition to future points in time based on a generalization of the value at risk. This allows for a sound definition of the Risk Margin. Our study helps to make the Solvency II insurance regulation more consistent.

Keywords: Solvency II; Solvency Capital Requirement; Risk Margin; dynamic value at risk; minimal SCR

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