Modelling claims reserving risks for solvency purposes

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Abstract

We construct the Valuation Portfolio (VaPo) for the runoff of a non-life insurance company. The VaPo represents the obligations of the insurer for the whole period of the insurance contract. These obligations are not simply measured by a one-dimensional figure (as standard for reserves in practice) but they are expressed as a portfolio of financial instruments, hence the actuarial reserves become a multidimensional portfolio. The basis of this multidimensional portfolio are financial instruments which, properly chosen, represent the future cash flows resulting from the insurance contract.

In this setup financial and technical risks are clearly separated. The financial fluctuations derive from the value process of the basis elements, the technical fluctuations are covered by an increased number of basis elements (VaPo protected against technical risks). We show how this protection can be calculated in the case of a non-life insurance company.

Keywords: Non-life insurance, claims reserving, solvency, valuation portfolio, replicating portfolio, runoff situation, risk management.

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References

