The Role of Time and Market-Consistent Risk Assessments in Solvency II

Abstract. Solvency II is formulated in a bottom-up way: it defines directly the relevant supervisory accounting items like risk margin, technical provision, and solvency capital requirement. This approach has two major disadvantages: First, there is no control on supervisory arbitrage and second, the Bellman principle is not applicable in order to define unambiguously the optikal replicating portfolio, needed for the so-called reference undertaking.

The theory of multiperiod risk assessments of stochastic processes and, in particular, their property of time-consistency gives a proper framework for supervisory regulations. These are the so-called top-down models. Of special importance is the existence of market-consistent majorants of these risk assessments, since they prevent the possibility of supervisory arbitrage and lead to sound definitions of the supervisory provisions and the optimal replication portfolios. Moreover, these models allow an economically clear description of a regulated transfer of insurance obligations including the cost-of-capital ratio. The transfer principle provides the definition of the risk margin and the decomposition of the solvency capital requirement into a hedgeable and a non-hedgeable part.

After a slight modification of Solvency II, we find a way to join bottom-up and top-down models, thus combining the advantages of the two approaches to insurance supervision.

Everybody is welcome!