

Research projects at the MRIC

Local Risk Minimization for Mortality Derivatives

Francesca Biagini, Irene Schreiber

Abstract

At the intersection of insurance and financial markets a new kind of financial insurance derivative has recently been introduced in order to hedge against systematic mortality risk in life insurance contracts, so called mortality-linked securities. These new kinds of products introduce an additional source of randomness that cannot be hedged by self financing portfolios consisting of primary assets. Hence it is natural to compute the price and hedging strategy of mortality-linked securities by means of a quadratic hedging criterion, specifically by using the local risk-minimization technique. The key idea of this approach is to find a replicating strategy with minimal cost. The results and techniques developed in this context may then also be applied to price and hedge more general kinds of hybrid financial products.