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Transformation of Heath?Jarrow?Morton models to Markovian systems

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Abstract

A class of volatility functions for the forward rate process is considered, which allows the bond price dynamics in the Heath-Jarrow-Morton (HJM) framework to be reduced to a finite-dimensional Markovian system. The use of this Markovian system in estimation of parameters of the volatility function via use of the Kalman filter is discussed. Further, the Markovian system allows the link to be drawn between the HJM and the Vasicek/Cox-Ingersoll-Ross (CIR) frameworks for modelling the term structure of interest rates.

Keywords:

Heath-JARROW-MORTON Models Foward Rate Volatility Term Structure Dynamics Markovian Models Non-LINEAR Filtering Preference Free Partial Differential Equations

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