

Illustrations of a Regime-Switching Stochastic Interest Rate Model With Randomized Regimes

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Abstract

A regime-switching stochastic model with randomized regime parameters creates a more plausible set of extreme paths for stress-testing than do the usual risk-neutral interest rate models. Generalizing the Black-Karasinski model by randomizing the mean reversion target provides an example. Calibrating to historical data using previously derived relationships, Monte Carlo calculations illustrate the characteristics of the model.