Forecasting US Interest Rates Using Vasicek Model

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Abstract

This thesis focuses on enhancing our comprehension of interest rates in the United States while developing a forecasting model based on the Vasicek approach. Simultaneously, it aims to delve into the mathematical and statistical aspects of this model. Leveraging historical data, we strive to estimate key parameters and evaluate the model's predictive accuracy.

The methodology begins by establishing a comprehensive understanding of interest rate theory and related mathematical and statistical concepts. Subsequently, we introduce the Vasicek model, a widely recognized framework for interest rate forecasting. Utilizing Maximum Likelihood Calibration, we estimate model parameters, harnessing insights from historical data to ensure precise estimations.

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