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Original Articles

Quasi-maximum likelihood estimates of Kiwi short-term interest rate

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66 Cite this article   ↗ https://doi.org/10.1080/1350485032000164062

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Abstract

This paper examines various short-term interest rate models in New Zealand. We estimate ten stochastic models of short-term interest rates using Quasi-maximum Likelihood Estimation. All models examined allow the conditional mean (drift) and conditional variance (diffusion) to be functions of the current short rate. We find no evidence of mean reversion but strong evidence of the need for the volatility of interest rate changes to be highly sensitive to the level of the Kiwi short rate. Specifically, we find the conditional volatility of the Kiwi short rate is monotonically increasing with a convex shape. We also find that the dependence of the conditional volatility of the Kiwi short rate on the level of the interest rate is significantly higher than is generally assumed by the traditional models. Finally, we find that the AS model outperforms all remaining nine models, the CKLS beats seven models, except for the CEV model, whereas the CEV beats the GBM, Dothan, and the CIR VR.

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