

Term-Structure Modelling at the Zero Lower Bound: Implications for Estimating the Term Premium

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Summary

Although the affine Gaussian term-structure model has been a workhorse model in term-structure modelling, it remains doubtful whether it is an appropriate model in a low interest rate environment because of its inability to preclude negative interest rates. This paper uses an alternative quadratic Gaussian-term structure model which is well known to be as tractable as the affine model and yet is suitable for interest rates close to zero. Compared with the quadratic model under the zero lower bound, we illustrate how the estimated term premium can be biased upward under the affine model. In contrast to the affine model, our numerical study shows that the quadratic model renders the estimated term premium less likely to be affected by the persistence of the data near the zero lower bound.