

Convexity Adjustments for ATS models*

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Abstract

Practitioners are used to value a broad class of exotic interest rate derivatives simply performing what is known as convexity adjustments (or convexity corrections). Convexity adjustments, however, are highly dependent on both the particular interest rate model one chooses and the exact payoff under analysis.

We focus on affine term structure (ATS) models and, in this context, conjecture convexity adjustments should be related of affine functionals. Thus we develop a unified framework to compute various convexity adjustments. These adjustments can be computed without the need of Taylor approximations for non-Gaussian ATS models. Unlike previous adjustments, they are exact solutions up to an ODE. We derive the system of Riccati ODE-s one needs to compute to obtain the exact adjustment for several examples.

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