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A Semi-Explicit Approach to Canary Swaptions in HJM One-Factor Model

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Abstract

Leveraging the explicit formula for European swaptions and coupon-bond options in the HJM one-factor model, a semi-explicit formula for 2-Bermudan options (also called Canary o to future times. S aption to a single nu most complex plified to perform n practice case y faster and more end even more fav

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Acknowledgments

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Notes

1. Bounded is too strong for the proof we use, some L^1 and L^2 conditions are enough, but as all the examples we present are bounded, we use this condition for simplicity.

2. See Hunt and Kennedy (2000) for the definition of a numeraire pair. Note that here we require that the bonds of all maturities are martingales for the numeraire pair (N, N).

3. Matlab code available from the author.

4. There is nothing special about that date, except it is my sister's birthday!

5. As the second step is shorter (6m), the distance between points is also smaller and more than 4n+1 final points are used.

6. It took around four hours on my computer to run the (non-optimized) code to compute g 200 steps precision o the tree computa