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Credit gap risk in a first passage time model with jumps

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Keywords: Gap risk Credit spreads Credit dynamics First passage time models Stochastic volatility General Ornstein–Uhlenbeck processes

JEL Classification: G13 C69

Notes

1Since 2009, following an initiative of the International Swaps and Derivatives Association to facilitate netting, credit default swaps are nowadays entered into with standardised premiums of 25, 100, 500 or 1000 basis points. As a consequence, entering into a CDS normally requires an upfront premium to be paid. In the analysis of our model, we neglect the changes in market quoting conventions, since the qualitative results on the spread dynamics are not affected.

2The term credit spread also refers to the yield spread, which is the yield difference of defaultable and default-free zero-coupon bonds of the same maturity. There are some subtle differences between yield spreads and CDS spreads, mainly due to factors such as liquidity of the underlying and restrictions regarding short-selling. However, we assume that stylised facts of the yield spread term structure that can be related to the credit ris ure as well.

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7If the in nce moves purely b tensity of the varia ant, determin d deterministic. The former can be incorporated by specifying the jump process as an additive process.

[8]Under a suitable metric on C, resp. D, the σ-algebra(C), resp. (D), corresponds to the σ-algebra generated by the open sets (with respect to the metric) of C, resp. D, see e.g. (1996, section II.§2) or Karatzas and Shreve (1998, sections 2.4 and 6.2).