

Discussiones Mathematicae
Probability and Statistics 37 (2017) 79–81
doi:10.7151/dmps.1196

DEFAULT PROPENSITY IMPLICIT IN PULLED TO PAR V@R FOR BONDS

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This work is dedicated to Roman Zmyslony as a token of gratitude for his joy and enthusiasm in the productive research collaborations he actively promoted between Poland and Portugal.

Whatever way we keep looking at bond prices there is no diffusion model that works.
– Pedro Corte Real, Cofounder at MAGENTAKONCEPT, Lda, Portugal.

Abstract

Using the *pulled to par* returns, proposed by [27] for computing historical V@R of bonds, we develop a way of extracting – at any reference date before maturity – *implicit default propensities* from observed bond quotes. This method is new to the literature and it has the advantage on focusing directly on loss given default.

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²This work was partially supported by the Fundação para a Ciência e a Tecnologia (Portuguese Foundation for Science and Technology) through the project UID/MAT/00297/2013 (Centro de Matemática e Aplicações).

³Project CEMAPRE-UID/MULTI/00491/2013 financed by the Portuguese Science Foundation (FCT/MCE) through national funds.

To illustrate the method we present two examples of actual computation with real data – on German and Portuguese bonds. The market data seems to support the proposed method.

In the case of a very concrete simple Gaussian model, we establish the connection between our *implicit default propensity* and the more traditional notions of *default probability* and *recovery given default* of a bond.

Keywords: value-at-risk, bonds, default probability, recovery given default.

2010 Mathematics Subject Classification: 91G40, 91B28, 91B70.

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Received 20 April 2017

Accepted 25 July 2017

