Koziol, Christian; Weitz, Sebastian
Does model complexity improve pricing accuracy? The case of Cocos.  (English)

Summary: In this study, we analyze whether model complexity improves accuracy of CoCo pricing models. We compare the out-of-sample pricing ability of four models using a broad dataset that contains all CoCos which were issued between January 1, 2013 and May 31, 2016 in euros. The regarded models include the standard model from J. De Spiegeleer and W. Schoutens [“Pricing contingent convertibles: a derivatives approach”, J. Derivat. 20, No. 2, 27–36 (2012; doi:10.3905/jod.2012.20.2.027)], a modified version enriched by credit risk, an extended model that accounts for the effective lifetime of the CoCo, and a trading model, solely based on historic market prices but no pricing theory at all. For a normal market environment, the simple trading model provides a higher pricing accuracy than the theory-based models. Under distress, however, a theory-based model with a sufficiently high complexity is required.

MSC:
91G20 Derivative securities (option pricing, hedging, etc.)

Keywords: contingent convertible bond; CoCo bond; CoCo pricing; continuous-time derivatives pricing; model complexity; test of pricing models

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References:


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