THE PRICING OF VULNERABLE POWER OPTIONS WITH DOUBLE MELLIN TRANSFORMS

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ABSTRACT

In the modern financial market, the scale of financial instrument transactions in the over-the-counter (OTC) market are increasing. However, in this market, there exists a counterparty credit risk. Herein, we obtain a closed-form solution of power option with credit risks, using the double Mellin transforms. We also use a numerical method to compare the differentiations of option price between the closed-form solution and Monte-Carlo simulation. The result shows that the closed-form solution is precise. In addition, the option’s price is sensitive to the exponent of the maturity stock price.

REFERENCES


