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Pricing Eurodollar Futures Options with the Heath—Jarrow—Morton Model

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PDF

Abstract

This article uses the algorithm developed by Ritchken and Sankarasubramanian (1995) to make comparisons among the Heath—Jarrow—Morton (HJM) models (Heath, Jarrow, & Morton, 1992) with different volatility structures in pricing the Eurodollar futures options. We show that the differences among the HJM models as well as the difference between the HJM models and Black's model can be insignificant when the volatility of the forward rate is relatively small. Moreover, our findings imply that the difference between the American-style and European-style options is insignificant for options with a life of less than 1 year. However, the difference can be significant for options with a 1-year maturity, the difference depending on the exercise price. Finally, our tests indicate that the difference between the forward price and the futures price is insignificant if the volatility parameter is low enough and when the volatility of the spot rate is proportional to the spot rate. A higher volatility parameter can lead to a significant difference between the forward price and the futures price, although its impact on the price of the options will still be trivial. © 2001 John Wiley & Sons, Inc. Jrl Fut Mark 21: 655–680, 2001

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Citing Literature

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