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Abstract
Weather derivatives have set up for many years, but there are no unified and standard pricing models until now. However, the current trend is towards setting up Weather Derivatives. Since the great temperature difference between winter and summer in Taiwan often leads to operation risk of power sources and climate industry.

This study takes 30 years temperature data of Taiwan as sample, and refers to long-term temperature model with Alton and Stillberger (2002) proposed and it also joins the ARCH effect to estimate the changes of Taiwan temperature. Moreover, we considered effects of option price upon different variances and different market price of risk. The result shows that the heteroskedasticity ARCH forecasted is bigger than the fixed variance under the long-term temperature. Thus, the call option price under the fixed variation supposition is smaller theoretically. Moreover the put option price under the fixed variance is bigger by the actual material demonstrated. In addition, the mathematics proof proved the influence of the option price upon mean and difference standard of HDD/CDD is the same with the traditional Block-Scholes formula.
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