Higher Order Moments in TXO Returns Implied by Option Prices

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ABSTRACT

The Black-Sholes (1973)model frequently misprices deep in the money and deep out the money options. Practitioners popularly refer to these strike price biases as volatility smiles. Several authors have proposed series expansion methods to price options when the risk-neutral density is asymmetric and leptokurtic. Among these, Corrado and Su (1996) provide an intuitive pricing formula based a Gram-Charlier Type A series expansion. However, their formula contains a typographic error that can be significant. Brown and Robinson (2002) correct their pricing formula and provide an example of economic significance under plausible market conditions. We compare the sensitivities of option prices to shifts in skewness and kurtosis using parameter values from Corrado and Su(1996) and Brown and Robinson (2002), and market data from the Taiwan index options market. We show that difference between the original, the original error bases t distribution, corrected of the Corrado and Su (1996) on the whole sample. We find significantly corrected of the Corrado and Su model in the option-implied distribution of stock return.

Keywords : Skewness ; Kurtosis ; Implied Volatility ; TXO

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