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## The Performance of Higher Moments Estimators: An Empirical Study

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### Abstract

This study investigates the performance of higher order moments, realised from the model-free Bakshi-Kapadia-Madan (MFBKM). We concentrate on investigating higher order option-implied moments a variance, skewness and kurtosis, chosen in relation to contracts defined in MFBKM, i.e. volatility, cubic, and quartic contract. The three approaches adopted in order to estimate the integrals of the defined MFBKM contracts are the basic (trapezoidal-rule), adapted (single-combined) and advanced method (cubic-spline). The sample data is extracted from DJIA index options data, which covers the period from January 2009 until December 2015. The results show that the advanced method performs poorly in estimating the MFBKM, especially in the case of skewness and kurtosis integrals estimation. The advanced method outperforms the other approaches in the case of the variance estimation. In estimating both model-free skewness and kurtosis, the adapted method is found to perform the best, instead.

### Keywords

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