Correcting for risk premium on Extended Generalised Leland Models: An empirical study on Dow Jones Industrial Average (DJIA) index options
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Abstract
The relative option pricing performance of Extended Generalised Leland models is examined in this study. We generalise the extended Leland models based on the implied adjusted volatility introduced in the models. Non-parametric framework is fitted into parametric option-pricing framework based on the Leland models to achieve a more realistic option pricing. To reflect the real probability measure, the implied adjusted information is corrected in terms of risk premium. This study concentrates mainly in examining the option-implied information produced by the models after correcting for risk-premium. Data extracted from DJIA index options are employed in this study, which covers the period from January 2009 until the end of 2015. We discovered that the option-implied volatility, which is priced using the Extended Generalised Leland models, especially after being corrected for risk-premium factor improves the option valuation accuracy significantly. © Published under licence by IOP Publishing Ltd.

Index Keywords
Costs, Financial markets, Risk assessment; Dow Jones Industrial averages, Empirical studies, Implied volatility, Non-parametric, Option pricing, Option valuation, Probability measures, Risk premium; Economics

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