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Harun, H.F.[a] , Abdullah, M.H.[b]

Correcting for risk premium on Extended Generalised Leland Models: An empirical study on Dow Jones Industrial Average (DJIA) index options
(2021) *Journal of Physics: Conference Series*, 1988 (1), art. no. 012045, .

[a] School of Informatics and Applied Mathematics, Faculty of Ocean Engineering Technology and Informatics, Universiti Malaysia Terengganu, Terengganu, Kuala Nerus, 21030, Malaysia
[b] Department of Computational and Theoretical Sciences, Kulliyyah of Science, International Islamic University Malaysia, Pahang, Kuantan, 25200, Malaysia

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

References
- Markowitz, H
  Portfolio selection
  (1952) *J. Fin*, 7, pp. 77-91.

- DeMiguel, V, Garlappi, L, Uppal, R
  Optimal Versus Naïve Diversification: How Inefficient is the 1/N Portfolio Strategy?
  (2009) *Rev. Fin. Stud*, 22, pp. 1915-1953.

- Kourtis, A, Markellos, R N, Symeonidis, L
  An international comparison of implied, realized and GARCH volatility forecasts
  (2016) *J. Futures Markets*, 36, pp. 1164-1193.

- Stilger, P S, Kostakis, A, Poon, S-H
  What does risk-neutral skewness tell us about future stock returns?
  (2017) *Management Sciences*, 63, pp. 1814-1834.

- Bams, D, Gildas, B, Thorsten, L
  Volatility measures and Value-at-Risk
  (2017) *International Journal of Forecasting*, 33, pp. 848-863.

- Kwong, Y L, Faff, R, Aas, K
  Enhancing mean-variance portfolio selection by mideling distributional asymmetries

(2016) *Journal of Economics and Business*, 85, pp. 49-72.

- Prokopczuk, M, Simen, C W
  The importance of the volatility risk premium for volatility forecasting
  (2014) *Journal of Banking and Finance*, 40, pp. 303-320.

- Bakshi, G, Kapadia, N, Madan, D
  Stock return characteristics, skew laws, and the differential pricing of individual equity options
  (2003) *Rev. Financial Stud*, 16, pp. 101-143.

- Leland, H E
  Option pricing and replication with transactions costs
  (1985) *J. Fin*, 40, pp. 1283-1301.

- Leland, H E
  Comments on "Hedging errors with Leland's option model in the presence of transactions costs"
  (2007) *Financ. Research Letters*, 4, pp. 200-202.

- Radzikowski, P
  Non-parametric methods of option pricing
  (2000) *Proc. of Informs-Korms*, pp. 474-480.
  (Seoul 2000 Conf)

- DeMiguel, V, Plyakha, Y, Uppal, R, Vilkov, G
  Improving portfolio selection using option-implied volatility and skewness
  (2013) *J. Financ. Quant. Anal*, 48, pp. 1813-1845.

- Symitsi, E, Lazaros, S, Apostolos, K, Raphael, M
  Covariance forecasting in equity markets
  (2018) *J Bank Financ*, 96, pp. 153-168.
  2018

- Le, T H, Kourtis, A, Markellos, R
  (2020) *Modeling Skewness in Portfolio Choice*,
  Available at SSRN 3708200

- Crisóstomo, R
  (2021) *Estimating Real World Probabilities: A Forward-Looking Behavioral Framework*,
  Available at SSRN 3732350

- Bakshi, G, Kapadia, N, Madan, D
  Stock return characteristics, skew laws, and the differential pricing of individual equity options
  (2003) *The Review of Financial Studies*, 16, pp. 101-143.

- Jiang, G J, Tian, Y S
  The model-free implied volatility and its information content
  (2005) *The Review of Financial Studies*, 18, pp. 1305-1342.

Correspondence Address
Harun H.F.; School of Informatics and Applied Mathematics, Terengganu, Malaysia; email: hanani.harun@umt.edu.my

Publisher: IOP Publishing Ltd

Conference name: 28th Simposium Kebangsaan Sains Matematik, SKSM 2021
Conference date: 28 July 2021 through 29 July 2021
Conference code: 171477

ISSN: 17426588
Language of Original Document: English
Abbreviated Source Title: J. Phys. Conf. Ser.
2-s2.0-85114207780
Document Type: Conference Paper
Publication Stage: Final
Source: Scopus