Abstract: Dynamic Option Hedging Strategy with Machine Learning Methodology

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Abstract

Option issuers generally utilize the traditional Dynamic Delta Hedging (DDH) method to avoid the risk caused by continuously changing option value. DDH duplicates payoff of option position by adjusting hedge position according to the delta by Black-Scholes (BS) model in order to maintain risk neutral state. DDH, however, is not able to guarantee optimal hedging performance because of the weaknesses caused by impractical assumptions inherent in BS model. Therefore, this study presents a methodology for dynamic option hedging strategy using artificial neural network (ANN) to enhance hedging performance and shows the superiority of the proposed method through computational experiments.

Acknowledgement

This work was supported by the 2011's research fund of Sangmyung University.