

Comparative Analysis of Hedging Performance of Stock Options: Dynamic Versus Static Hedging

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Abstract: The purpose of this article is to examine the hedging performance of the stock options by applying two dynamic, and one constant conditional correlation models-bivariate asymmetric Glosten-Jagannathan-Runkle-Generalized Autoregressive Conditional Heteroscedastic (GJR-GARCH) model and dynamic conditional correlation multivariate GARCH (DCC-GARCH) model, constant conditional correlation multivariate GARCH (CCC-GARCH) model. Traditional static hedging model-Ordinary Least Square (OLS) regression model is used as the benchmark model. The objective function of portfolio variance minimization was used to measure the optimal hedge ratio and hedging effectiveness. Options are grouped into three categories: in the money, at the money and out of the money. The results show that (1) Most of the models examined in this article can substantially reduce portfolio risk; (2) The results reveal that the bivariate asymmetric GJR GARCH models are superior to the other models in put option hedging; (3) Hedge ratio and hedging effectiveness heavily depend on the moneyness of the options; (4) The hedging effectiveness of put option is better than the call option for all the models. Overall, the dynamic conditional correlation models achieve better performance than the constant conditional correlation models and OLS model. However, the transaction cost is not taken into account to judge which moneyness option is more cost effective.