

摘要

本文的主旨是結合選擇權定價理論和實務的交易策略，使用 Bernardo and Ledoit (2000)的 gain-loss ratio 方法去找選擇權的合理價格區間，而非傳統的 Black-Scholes 算出的單一選擇權價格。藉由我們主觀設定 gain-loss ratio，若市場價格掉出此區間則我們稱為不理性或半套利價格，而我們可以藉由控制不同的 gain-loss ratio 調整我們想要的價格區間。

實證結果可知，藉由我們主觀設定的 gain-loss ratio 愈大，選擇權價格區間愈寬，掉出此區間的機會變小，但整體報酬率大致會提高，發生極端損失的頻率會下降；在考量報酬率和風險的抵換下，賣賣權 (sell put) 的績效比下勒式 (short strangle) 的績效來的好；藉由我們的方法，一旦開倉就持有部位直到到期的績效是最好的。最後，實證結果發現，每十分鐘更新的波動率並未降低策略的風險；較長的波動率估計期可以降低風險。

關鍵字: gain-loss ratio、選擇權、價格區間、交易策略。



Abstract

The purpose of this paper is to tight the connection between the option pricing theory and practical trading strategies. The gain-loss ratio method of Bernardo and Ledoit (2000) is employed instead of Black-Sholes pricing method to investigate a reasonable price bounds. By imposing the gain-loss ratio, the option price fall out of the boundary is regarded as an irrational or a semi-arbitrage price. The trading strategies are based on the gain-loss bounds, and various bounds can be obtained by adjusting the gain-loss ratio.

The empirical result shows that the greater the gain-loss ratio of trading strategies, the wider the gain-loss bound. The probability that the price fall out the boundary is lower but the return of the strategies is approximately higher. The frequency of facing extremely losses is lower. Moreover, the performance of selling put is better than short strangle when taking the tradeoff between return and risk into consideration. Under our specification, holding the position to maturity seems to have the best performance. Changing the volatility every ten minutes doesn't have big contribution of reducing the risk and extending the sample period of estimating volatility can lower the risk.

Keywords: gain-loss ratio, option, price bounds, trading strategies.