Optimal option portfolio strategies

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Abstract

Options should play an important role in asset allocation. They allow for kernel spanning and provide access to additional (priced) risk factors such as stochastic volatility and negative jumps. Traditional methods of asset allocation (e.g. mean-variance allocation) are not adequate for options because the distribution of returns is non-normal and the short sample makes it difficult to estimate their distribution. We propose a method to optimize option portfolios that solves these limitations. An out-of-sample exercise is performed and we show that, even when transaction costs are incorporated, our portfolio strategy delivers an annualized Sharpe ratio of 0:54 compared to 0:06 of S&P 500 index in the period between January 1996 and September 2008.

Keywords

Finance, Asset allocation, Options.

References

Eraker, B. (2007). The performance of model based option trading strategies. Working Paper.

Jones, C. (2006). A nonlinear factor analysis of S&P 500 index option returns. *J. Finance 61*, 2325–2363.

Coval, J.D. and Shumway, T. (2001). Expected option returns. *J. Finance 56*, 983–1009.