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The Impact of Option Strategies in Financial Portfolios Performance: Mean-Variance and Stochastic Dominance Approaches

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Abstract

This study employs the mean-variance (MV) criterion, Capital Asset Pricing Model (CAPM) statistics and stochastic dominance (SD) analysis to investigate the performance of option strategies, including writing out-of-the-money (OTM) covered call and buying in-the-money (ITM) protective put, with that of the pure-stock investment by analysing the French data in the entire 1999 year. Our results from MV criterion show that none of these three strategies dominate one another but our CAPM statistics show that in general buying ITM protective-put strategy obtains the highest performance, followed by the writing OTM covered-call strategy while the naked stock obtains the smallest values. This confirms the superiority of ITM protective-put strategy, followed by OTM covered-call strategy by using the Beta coefficient, Sharpe ratio, Treynor and Jensen indices.

As the return distributions of these strategies are non-normal, the MV criterion and the CAPM statistics may not be appropriate to assess the relative performance measurement of the portfolios. We further investigate the performance by employing SD approach. Our SD findings reveal that most of the buying covered-call and writing protective - put strategies are superior to their corresponding pure-stock strategy, as in general the former stochastically dominates the latter in the sense of first order SD. This infers that there may exist an anomaly of the existence of an arbitrage opportunity in option trading that all types of non-satiated investors will increase their wealth and utility by switching from the pure unhedged stock strategy to their corresponding buying protective - put or writing covered-call strategies. In addition, we find the dominance relationship between the two hedged positions is not as clear as the comparison with their unhedged positions, but on average more buying ITM protective put outperforms writing OTM covered call in the sense of the first-order SD. In short, our results confirm that option introduction improve significantly the performance of unhedged portfolios, especially buying ITM protective put.

Keywords: Writing covered call option, Buying protective put option, portfolios management, mean-variance approach, nonparametric stochastic dominance test

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