

Cointegration pairs trading strategy on derivatives

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The notion of cointegration has been widely used in finance and econometrics, in particular in constructing statistical arbitrage strategy in the stock and the currency markets. In this paper, the arbitrage trading strategy for derivatives based on cointegration is generalized to account for the volatility factor. Pairs of short dated at-the-money straddles of European options with positive net carry (i.e. theta) are considered, so as to capture the mean reversion property of the linear combinations of implied volatilities. A performance analysis is conducted based on historical data, suggesting that the strategy works well during low volatility regimes but poorly during high volatility regimes. To improve the performance of the strategy, criteria are imposed on the trade selection process so as to take the forecasting realized volatilities into account. Empirical study for the renewed strategy is implemented using a 3-year historical data of currency options.