

An Application of the DCC Model into the Stock Index Futures and Spot Markets

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ABSTRACT

The globalization of financial markets offers investors more opportunities to create profits; but such liberalization and internationalization have also resulted that the interaction relationships among financial markets have become more and more complex and risky at the same time. In this study, we collect market data of index futures and spot on CAC 40, FTSE 100, NIKKE 1225, E-MINI S&P 500, DAX and Kospi200, apply them into the DCC model by Engle (2002), and then include basis and asymmetric effect into the model so as to research how the previous on-period positive basis and negative basis influence index futures and spot. From the empirical study, we find that the returns of index futures and spot always present high correlation, and the covariance between the two markets appears unstable. In general, the persistence of interaction between index futures and spot is all time long, and the asymmetric effect usually exists between index futures and spot in the markets observed above except for E-MINI S&P 500. Moreover, it is obvious that the positive basis gains more powerful than negative basis when the fluctuation of the basis affects index futures and spot. Besides, we also find that asymmetric DCC-GARCH model outperforms DCC-GARCH model when conducting the numbers of failures test, proportion of failures test and LR test.

Keywords : DCC-GARCH model ; basis ; asymmetric effect ; VaR

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