THE STUDY OF INTERNATIONAL EQUITY MARKET CORRELATION USING EXTREME VALUE THEOREM

Sasinuch Laptikultham
ID 5502042319

Master of Science Program in Finance (International Program)
Faculty of Commerce and Accountancy, Thammasat University, Bangkok, Thailand
May 2014

ABSTRACT

Since the study of emerging market has become more interesting, this study aims to investigate the international equity market correlations between developed and emerging markets based on Extreme Value Theory. On peak-over-threshold (POT) approach, the return exceedances are defined by threshold to focus on the tail of return distribution. The seven developed market returns are paired to Thai market returns to model the bivariate distributions, then, the seven parameters are resulted from Maximum likelihood estimation. Empirically, from MSCI weekly returns data from January 1990 to November 2013, the correlations between markets have shown the effect of size and sign from the prespecified threshold including asymmetric correlations and an undesirable influence to correlations on negative returns. In contrast of previous studies citing that the correlations in volatile periods are higher than tranquil periods, this study found that the market trends matter since the correlations are non-increase with the higher level of threshold, and the correlations on negative returns are greater than positive returns, respectively.

Key word: Correlations, International equity markets, Extreme Value Theory, Return exceedance, bivariate distribution, Maximum likelihood estimation.