

# Assessment of 48 Stock markets using adaptive multifractal approach

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## Abstract

In this paper, stock market comovements are examined using cointegration, Granger causality tests and nonlinear approaches in context of mutual information and correlations. Since underlying data sets are affected by non-stationarities and trends, we also apply Adaptive Multifractal Detrended Fluctuation Analysis (AMF-DFA) and Adaptive Multifractal Detrended Cross-Correlation Analysis (AMF-DXA). We find only 170 pair of stock markets cointegrated, and according to the Granger causality and mutual information, we realize that the strongest relations lies between emerging markets, and between emerging and frontier markets. According to scaling exponent given by AMF-DFA,  $h(q = 2) > 1$ , we found that all underlying data belong to non-stationary process. According to Efficient Market Hypothesis (EMH), only 8 markets are classified in

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