

ABSTRACT

In this study, we use two alternative methods, approximate entropy and relative entropy from statistical physics and nonlinear dynamics to estimate the weak efficiency of markets. These are compared with the standard and traditional methods like Geary Test and Autocorrelation Function Q-Test. Geary Test tests is used for randomness in the market and Q-statistic checks the independency. Relative Entropy uses the volatility probability distribution obtained from the Fokker-Planck equation of the Heston Model corresponding to the financial information. Approximate entropy is proposed by Pincus et al. Thereafter, spillover effects of returns, volatility in returns and approximated entropy all seventeen countries, developed and developing countries is quantified including the total spillovers and directional spillovers. The study of Volatility and ApEn spillovers intensified with the crisis and collapse of Lehman Brothers.