Nonlinearity in emerging market indices: A comprehensive study of stock exchange market dynamics

This research examines the presence of nonlinearities in N-11 developing economies using various nonlinearity tests. The initial tests include BDS and Runs tests as indicators of nonlinearity. Subsequently, direct nonlinearity tests by White (1989) and Teräsvirta et al. (1993), Keenan (1985) and Tsay (1986) are employed. Finally, the Threshold Autoregressive test is conducted to complement other test. The results reveal the prevalence of nonlinearities and cyclical patterns in the stock indexes of these economies, challenging the assumptions of the Efficient Market Hypothesis (EMH).

Keywords: efficient market hypothesis; emerging economies; stock exchange market; nonlinearity; threshold model.

JEL classification: C22; C52; C58.

1. Introduction

Recently, there has been a debate regarding the ability to predict stock market behavior using specific data sources. This has led to numerous empirical studies exploring the effectiveness of the Efficient Market Hypothesis in various global stock markets (Dockery, Kavussanos, 1996; Fama, 1970, 1998; Lo, MacKinlay, 1987, etc.). One recurring concern is the presence of irregularities that result in market inefficiency (Gozbasi et al., 2014). These inefficiencies are often attributed to the existence of nonlinearities and cycles in stock markets, which has garnered significant attention from scholars and policymakers (Hsieh, 1989, 1991; Scheinkman, Lebaron, 1989; Caraiani, 2012; Hyde, Bredin, 2005; Lim, Liew, 2003, etc.). In this emerging literature, nonlinear models are employed to provide comprehensive insights into the behavior of economic and financial series.

Nonlinear models provide valuable perspectives on understanding the relationship between stock prices and a range of factors including transaction costs, different attitudes of market participants, the presence of noise traders, varying investment horizons, short selling activities, risk profiles, bid-ask spreads, collective behavior, obstacles in the market, etc (Sarantis, 2001; Aslanidis et al., 2003; McMillan, 2003; Kim et al., 2008; Hsieh, 1991). It is important to acknowledge the limitations of assuming linearity, as it disregards asymmetry and fails to capture the dynamics present in economic and financial series. As a result, there has been an increasing focus on investigating nonlinear