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**Investigating the nonlinear dynamics of
emerging and developed stock markets**

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Financial time-series has been of interest of many statisticians and financial experts. Understanding the characteristic features of a financial-time series has posed some difficulties because of its quasi-periodic nature. Linear statistics can be applied to a periodic time series, but since financial time series is non-linear and non-stationary, analysis of its quasi periodic characteristics is not entirely possible with linear statistics. Thus, the study of financial series of stock market still remains a complex task having its specific requirements. In this paper keeping in mind the recent trends and developments in financial time series studies, we want to establish if there is any significant relationship existing between trading behavior of developing and developed markets. The study is conducted to draw conclusions on similarity or differences between developing economies, developed economies, developing-developed economy pairs. We take the leading stock market indices dataset for the past 15 years in those markets to conduct the study. First we have drawn probability distribution of the dataset to see if any graphical similarity exists. Then we perform quantitative techniques to test certain hypotheses. Then we proceed to implement the Ensemble Empirical Mode Distribution technique to draw out amplitude and phase of movement of index value each data set to compare at granular level of detail. Our findings lead us to conclude that the nonlinear dynamics of emerging markets and developed markets are not significantly different. This could mean that increasing cross market trading and involvement of global investment has resulted in narrowing the gap between emerging and developed markets. From nonlinear dynamics perspective we find no reason to distinguish markets into emerging and developed any more.

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