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EPISODIC NON-LINEARITY AND NON-STATIONARITY IN ASEAN EXCHANGE RATES RETURNS SERIES

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Abstract

A method proposed by Hinich and Patterson (1995) is employed in this study to examine the stability of the non-linear dependency structures underlying the exchange rates returns series of four ASEAN countries- Indonesia (IDR), the Philippines (PHP), Singapore (SGD) and Thailand (THB). The bicorrelation test results reveal the episodic and transient nature of these non-linear dependencies, which suggest that they are not persistent enough for investors to benefit from it. By transforming the returns into a set of binary data, the extended test procedure demonstrates that, while the GARCH-type models are commonly applied to financial time series such as exchange rates, they cannot provide an adequate characterization for the underlying process of IDR, PHP and THB bilateral exchange rates. Further investigation reveals that the violation of the covariance stationarity assumption as required by the GARCH process is due to the presence of episodic non-stationarity in the data. Given the prevalence of these episodic transient features across financial markets in the world, there is the need for researchers to take into account these salient features in their model construction.

Keywords: GARCH; Non-linearity; Non-stationarity; Correlations; Bicorrelation; ASEAN foreign exchange markets.

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