

ADEQUACY OF GARCH MODELS FOR ASEAN EXCHANGE RATES RETURN SERIES

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ABSTRACT

This study employs the Hinich portmanteau bivariate correlation test (Hinich and Patterson, 1995; Hinich, 1996) as a diagnostic tool to determine the adequacy of the GARCH models in describing the exchange rates return generating process of selected ASEAN countries-Indonesia (IDR), the Philippines (PHP), Thailand (THB) and Singapore (SGD). Our bivariate correlation results demonstrate that, while GARCH models are commonly applied to financial time series such as exchange rates, they cannot provide an adequate characterization for the underlying process of THB, IDR and PHP exchange rates. Further investigation using the windowed test procedure revealed that this is due to the presence of episodic non-stationarity in the data, which could not be captured by any kind of ARCH or GARCH models, even after modifications to the specifications of the GARCH models. These findings have strong implications on the pricing of currency option, portfolio selection, development of optimal hedging technique and risk management. This study also points to the need to improve models that assume covariance stationarity such as the GARCH family since this assumption is not supported by many financial series, even in the exchange rates of emerging ASEAN markets.