

Stock Returns in Emerging Markets and the Use of GARCH Models

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Abstract

We use the Hinich portmanteau bicorrelation test to detect for the adequacy of using GARCH (Generalized Autoregressive Conditional Heteroscedasticity) as the data-generating process to model conditional volatility of stock market index rates of return in 13 emerging economies. We find that a GARCH formulation or any of its variants fail to provide an adequate characterization for the underlying process of the 13 emerging stock market indices. We also study whether there exist evidence of ARCH effects, over windows of 200, 400 and 800 observations, using Engle's LM (Lagrange Multiplier) test, and find that there exist long periods of time with no evidence of ARCH effects. The results suggest that policymakers should use caution when using autoregressive models for policy analysis and forecast because the inadequacy of GARCH models has strong implications for the pricing of stock index options, portfolio selection and risk management. Specially, measures of spillover effects and output volatility may not be accurate when using GARCH models to evaluate economic policy.

Keywords

KeyWords Plus: EXCHANGE-RATES; NONLINEARITY