# UNIVERSITI TEKNOLOGI MARA

## COMPARATIVE PERFORMANCE OF ARIMA AND GARCH MODELS IN MODELLING AND FORECASTING VOLATILITY OF KUALA LUMPUR COMPOSITE INDEX

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**ABSTRACT**

Time series modelling is an effective study that has engaged consideration of researcher society in excess of the past few periods. The purpose of the time series modelling is to wisely compile and precisely study the previous information of a time series to create an applicable model that defines the necessary arrangement of the series and to generate forecast values for the series. It is well acknowledged that a time series are regularly affected with outliers. Outliers may impact the forecasting where the tendency in parameter estimates created by extreme observation will reduce its effectiveness because the optimum predictor for an Autoregressive Integrated Moving Average (ARIMA) model is determined by its parameters. This study used ARIMA and Generalized Auto-Regressive Conditional Heteroscedasticity (GARCH) to compare the best model for forecasting Kuala Lumpur Composite Index (KLCI) when the outlier exists. The best models of ARIMA and GARCH were evaluated using Mean Square Error (MSE), Root Mean Square Error (RMSE) and Mean Absolute Percentage Error (MAPE). It can be concluded that GARCH model performed better compared to Box-Jenkins ARIMA in forecasting KLCI

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