

**SECTOR WISE COMPARATIVE STUDY ON STOCK
PRICE INDICES USING TIME SERIES ANALYSIS:
CASE STUDY OF COLOMBO STOCK EXCHANGE**

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Abstract

The stock markets of the country play a vital role in its economy. Stock market indices are vital fragments of information for investors. It is very important to develop models that reflect the pattern of the stock price movements for different sectors since it becomes very significant to investors and policy makers. Therefore, the aim of this research study was to develop models to forecast different sector indices in Colombo Stock Exchange and to compare sector wise models. The investigation was performed using secondary data for sample of ten listed sectors in Colombo Stock Exchange (CSE) for the thirty-four years' time period from 2nd January 1985 to 31st December 2018. Data were collected by using data library maintain by Colombo Stock Exchange. In analyzing secondary data financial time series data analysis techniques were used. ARCH family models were applied including Autoregressive conditional heteroscedasticity model, Generalized Autoregressive conditional heteroscedasticity model, Threshold Autoregressive conditional heteroscedasticity model, Exponential generalized autoregressive conditional heteroscedastic model, Integrated Generalized Autoregressive conditional heteroscedasticity model and Power Autoregressive conditional heteroscedasticity model in this research study since the sector indices are financial time series. Findings revealed that appropriate model to forecast the sector indices of Oil Palms sector, Services sector and Stores & Supplies sector as PARCH (2,1) model, Beverage, Food & Tobacco sector as PARCH (1,1) model, Chemicals & Pharmaceuticals sector as PARCH (2,2) model, Banking Finance & Insurance sector and Investment Trusts sector as IGARCH (2,2) model, Footwear & Textiles sector as EGARCH (1,1) model, Manufacturing sector as EGARCH (1,3) model and Hotels & Travels sector as TARCH (1,1) model. The findings of this research study are useful to the policy makers and the investors for their decision making.

Keywords: Stock price indices, time series analysis, Colombo stock exchange

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LIST OF ABBREVIATIONS

Abbreviation	Description
ASPI	All Share Price Index
CSE	Colombo Stock Exchange
ADF	Augmented Dickey Fuller test
ACF	Auto correlation function
PACF	Partial autocorrelation function
ARCH	Autoregressive conditional heteroscedasticity
GARCH	Generalized Autoregressive conditional heteroscedasticity
TARCH	Threshold Autoregressive conditional heteroscedasticity
EGARCH	Exponential generalized autoregressive conditional heteroscedastic
IGARCH	Integrated Generalized Autoregressive conditional heteroscedasticity
PARCH	Power Autoregressive conditional heteroscedasticity
AIC	Akaike information criterion
SC	Schwarz criterion