

**ASSESSING THE RELATIONSHIP BETWEEN THE
ALL SHARE PRICE INDEX AND SOME SELECTED
ECONOMIC INDICES IN SRI LANKA**

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DECLARATION

I declare that this is my own work and this thesis/dissertation does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any other University or Institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgment is made in the text. I retain the right to use this content in whole or part in future works (such as articles or books).

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The above candidate has carried out research for the PhD/MPhil/Masters thesis/dissertation under my supervision. I confirm that the declaration made above by the student is true and correct.

Name of Supervisor: Dr. Samantha Mathugama

Signature of the Supervisor:

Date :

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ABSTRACT

The purpose of this research is to create a predictive model based on changes in macroeconomic variables for the Colombo Stock Exchange's (CSE) All Share Price Index (ASPI). The macroeconomic variables considered are interest rate, Colombo Consumer Price Index (CCPI), and Gross Domestic Product (GDP) growth. The dataset, which includes quarterly data from 2007 to 2023, was obtained from the CSE, Central Bank of Sri Lanka (CBSL), and Census of Statistics. From the descriptive analysis, it was found that the ASPI values vary from 1503 to 12226 within the time range. The cross-correlation coefficient was used to examine the correlation between ASPI and independent variables at different time lags. Interest rates and GDP growth have a marginally negative relationship with ASPI, while the relationship between CCPI and ASPI is negligible. A univariate time series analysis was conducted and the model was fitted using ARIMA to forecast the ASPI values in the future. The analysis involves testing for stationarity, checking normality, and residual diagnostics among independent variables. The stationarity of variables was checked using the Augmented Dickey-Fuller test. Further, the cointegration among variables was checked using the Johansen co-integration test as the data was not stationary. After identifying there is no cointegration, the VAR (Vector Auto-Regressive) model was fitted to find the short-term dynamics. Significance of the parameters and model adequacy measures were conducted for the VAR model. The autocorrelation among errors was checked using the Ljung-Box test while the white test was used to check the homoscedasticity of the errors. The normality of the errors was checked using Shapiro-Wilk tests and can be visualized from Q-Q plots.

Keywords: ASPI, Time Series Analysis, VAR model, Forecasting

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LIST OF ABBREVIATIONS

Abbreviation	Description
CSE	Colombo Stock Exchange
ASPI	All Share Price Index
CCPI	Colombo Consumer Price Index
CBSL	Central bank of Sri Lanka
GDP	Gross Domestic Product
BSE	Bombay Stock Exchange
ISE	Istanbul Stock Exchange
NSE	Nairobi Securities Exchange
MSCI	Morgan Stanley Capital International
NASI	Nairobi All Share Index
MA.L1	MA value at Lag 1
AR.L1	AR value at Lag 1
AR.L2	AR value at Lag 2