

**FORECASTING FINANCIAL PERFORMANCE OF BANK
OF CEYLON, SRI LANKA: A TIME SERIES ANALYSIS**

Nadeeka Liyanage

178114G

Degree of Master of Financial Mathematics

Department of Mathematics

University of Moratuwa

Sri Lanka

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Abstract

Bank of Ceylon (BOC) is government owned largest commercial bank in Sri Lanka. Deposits, Profits and Advances are the main financial indicators of performance of a bank. For the reaching of its ultimate goal of profit maximization, effective and efficient analysis of financial performance is more helpful. For analyzing and predicting financial statements of banking, the method of trend analysis is more important. Analyzing the behavioral patterns of key measures of financial performance; Deposits, Profits and Advances of Bank of Ceylon and modelling and forecasting the financial performances are the key objectives of this analysis. To implement and understand the patterns of the financial performance the Descriptive analysis, Sen's Slope, Non-parametric Loess analysis, Quadratic trend modeling, Linear trend modeling, Growth curve modeling and Change Point analysis were used. ARIMA/SARIMA and VAR techniques were utilized in modeling and predicting the performances. The model performances were cross validated. According to findings, the growth curve model was suited for the measures of Profits and deposits. Quadratic trend model was suited for Advances. An upward trend was detected for the measures of Advances and Deposits, but it was slight horizontal behaviour for Profit in the Loess analysis. The Sen's slope of three key measures were significant for trend of estimated slopes. According to the Change Point analysis, significant changing points were indicated for all the three series. The best fitted ARIMA/SARIMA models for Advances, Deposits, and Profit generated predictions for each series separately. The VAR analysis showed that an increase in deposits is positively impact to the profitability of BOC. The analysis of this study is important in a changeable, dynamic and competitive business nature. New expanding situations can be justified and predicted from the study together with reducing shortcomings drawbacks and inefficiencies that help for the business enhancement. In addition, this analysis is worthy for analyzing and understanding the financial situation for same sector competitors. Not only that, this analysis will help for both internal and external customers to get a wide understanding of the current industry situation before taking their business decisions.

Keywords: Bank of Ceylon, Financial Performance, Time Series Analysis

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LIST OF ABBREVIATIONS

Abbreviation	Description
MAPE	Mean Absolute Percentage Error
MAD	Median Absolute Deviation
MSD	Mean Signed Difference, Deviation
ARIMA	Autoregressive Integrated Moving Average
VAR	Vector Auto Regression
ADF	Augmented Dickey Fuller Test
PP.Test	Phillips Perron Unit Root Test
S.E	Standard Error
ACF	Auto Correlation Function
PACF	Partial Auto Correlation Function1
LOOCV	Leave One Out Cross Validation