

**EFFECT OF MACROECONOMIC VARIABLES TO
DETERMINE THE SHARE MARKET PERFORMANCE
IN SRI LANKA**

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Degree of Master of Science

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Sri Lanka

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Thesis/Dissertation submitted in partial fulfilment of the requirements for the degree
Master of Science in Financial Mathematics

Department of Mathematics

University of Moratuwa

Sri Lanka

October 2020

DECLARATION

“I declare that this is my ‘own’ work and this dissertation does not incorporate without acknowledgment any material previously submitted for a Degree 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.”

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Name of the Supervisor: Mr. A.R. Dissanayake

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ABSTRACT

The stock exchange is considered an economic barometer that emphasises the economic condition of any country. The rise or fall of share prices indicates an economic boom or recession cycle. The better performance of the share market attracts the attention of investors and the exchange of shares continues the process of reinvestment and disinvestment which leads to economic growth via capital formation. The diminishing performance of the share market adversely impacts the creation of investments. It directly impacts economic growth as a component of aggregate demand and as a deterministic factor of the productive capacity of the economy. Thus, the study focused on identifying the effect of macroeconomic variables on the performance of the share market which would attract the attention of economic policy-makers in terms of enhancing the investments within Sri Lanka. The study focused on few key macroeconomic variables as in inflation rate, money supply, treasury bill rate, crude oil prices, gold prices, foreign exchange rate, and analysed the performance of All Share Price Index (ASPI) with those variables. The quantitative research approach was applied for the monthly data collected for 213 months from January 2002 – September 2019. Two factors were derived using Principle Component Factoring as Economic Growth Factor and Time Value of Money Factor. Based on both econometric and time series analysis, the study developed the Vector Autoregressive (VAR) model and the GARCH (1,1) model to analyse the performance of ASPI. The results of VAR model revealed that ASPI data for past months, and time value of money factor which includes inflation and treasury bill rate is more deterministic when analysing the performance of Sri Lankan stock exchange. GARCH (1,1) model also confirmed the same result in its conditional mean equation. However, the economic growth factor shows insignificant result in both the models in relation to the performance of Colombo Stock Exchange.

Keywords: Macroeconomic Variables, Share Market Performance, Vector Autoregressive, GARCH (1,1), Sri Lanka

DEDICATION

I dedicate this to

my mother

who

dedicated her all happiness

to make me a wilful and valuable person

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List of Abbreviations

ACF	Auto Correlation Function
ADF Test	Augmented Dickey-Fuller Test
AIC	Akaike Information Criterion
APT	Arbitrage Pricing Theory
AR Model	Autoregressive Model
ARCH	Autoregressive Conditional Heteroscedastic
ASPI	All Share Price Index
CAPM	Capital Asset Pricing Model
CBSL	Central Bank of Sri Lanka
CCPI	Inflation Rate/ Colombo Consumer Price Index
CSE	Colombo Stock Exchange
CV	Critical Value
DF	Dickey-Fuller
EMH	Efficient Market Hypothesis
FER	Foreign Exchange Rate
FPE	Final Prediction Error
GARCH	Generalized Autoregressive Conditional Heteroscedasticity
GDP	Gross Domestic Production
GP	Gold Prices
HQ	Hannan-Quinn Information Criterion
IR	Interest Rate

KMO	Kaiser-Meyer-Olkin Statistic
LKR	Sri Lankan Rupees
LN_ASPI	Log Values of ASPI
LN_FER	Log Value of Foreign Exchange Rate
LN_GDP	Log Values of Gross Domestic Production
LN_GP	Log Value of Gold Price
LN_MS	Log Value of Money Supply
LN_OP	Log Value of Oil Price
MLF	Maximum Likelihood Factoring
MS	Money Supply
NKQ	New Keynesian Q theory
NSE	Nigerian Stock Exchange
OLS	Ordinary Least Square
OP	Crude Oil Prices
PACF	Partial Auto Correlation Function
PAF	Principal Axis Factoring
PCA	Principal Component Analysis
PCF	Principal Component Factoring
PP Test	Phillips – Perron Test
QTM	Quantity Theory of Money
S&P 20	S&P Sri Lanka 20 Index
SAARC	South Asian Association for Regional Cooperation
SEC	Securities & Exchange Commission

SIC	Schwarz Information Criterion
TB	Treasury Bill Interest Rate
VAR	Vector Autoregressive
VECM	Vector Error Correction Model