

**ANALYSIS OF THE RELATIONSHIP OF STOCK  
MARKET WITH EXCHANGE RATE AND SPOT GOLD  
PRICE OF SRI LANKA**

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**By**

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Department of Mathematics

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## **DECLARATION OF THE CANDIDATE**

I hereby declare that the research titled ANALYSIS OF THE RELATIONSHIP OF STOCK MARKET WITH EXCHANGE RATE AND SPOT GOLD PRICE OF SRI LANKA submitted by me is based on actual and original work carried out by me. Any reference to work done by any other person or institution or any material obtained from other sources have been duly cited and referenced. I further certify that the research thesis has not been published or submitted for publication anywhere else nor it will be send for publication in the future.

.....

Signature of the Candidate

.....

Date

**DECLARATION OF THE SUPERVISOR**

To the best of my knowledge the above particulars are correct.

.....

Signature of the Supervisor

.....

Date

## **ACKNOWLEDGEMENTS**

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## ABSTRACT

Intention of this thesis is to analyze the interrelationship of stock market volatility with LKR/USD exchange rate and spot gold prices in Sri Lankan stock market. There are several statistical techniques used in this study, such as Unit Root Augmented Dickey Fuller test, Box-Pierce test, Ljung–Box test, ARCH LM test in order to identify the relationship between stock returns and macroeconomic variables. Daily data for All Share Price Index, Exchange rate and Spot gold prices were collected over six-year period from 4<sup>th</sup> Jan 2010 to 4<sup>th</sup> Mar 2016. EGARCH specification, which was proposed by Nelson was used to model the variables in order to derive an equation to forecast the future behavior of stock returns. Evidently, statistical model depicted a strong evidence on non-existence of relationship between stock returns and exchange rate but it was proven the strong negative relationship between stock returns and spot gold price returns.

*Key Words – Volatility, Stock Return, Exchange Rate Return, Unit Root Augmented Dickey Fuller test, GARCH,EGARCH*

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## LIST OF ABBREVIATIONS

<b>Abbreviation</b>	<b>Description</b>
GDP	Gross Domestic Production
CAPM	Capital Asset Pricing Model
ASPI	All Share Price Index
ARCH	Auto Regressive Conditional Heteroscedasticity
GARCH	Generalized Auto Regressive Conditional Heteroscedasticity
EGARCH	Exponential Generalized Auto Regressive Conditional Heteroscedasticity
GJR-GARCH	Glosten-Jagannathan-Runkle Generalized Auto Regressive Conditional Heteroscedasticity
USD	United State Dollars
GBP	Great Britain Pounds
LKR	Lankan Rupees
GFET	Guide to Foreign Exchange Transactions
US	United State
UK	United Kingdom
BRICs	Brazil, Russia, India, China and South Africa
VAR	Vector Auto Regression
ISE	Istanbul Stock Exchange
AR	Auto Regression
DF	Dickey–Fuller
ADF	Augmented Dickey–Fuller
JB	Jarque–Bera
AIC	Akaike Information Criterion

HQ	Hannan–Quinn information criterion
RMSE	Root Mean Square Error
MAE	Mean Square Error
MAPE	Mean Absolute Percentage Error