



29830 #

THE DYNAMIC RELATION BETWEEN STOCK RETURNS AND TRADING VOLUME OF COLOMBO STOCK EXCHANGE

Thesis Submitted for the Fulfillment of the MBA Degree at the Faculty of Management Studies, Rajarata University of Sri Lanka, Mihintale

Candidate

W.G.S.Konarasinghe

RJT/MBA/2010/17



Supervisor

Dr. Chandrapala Pathirawasam, Senior Lecturer

Department of Commerce and Financial Management

Faculty of Commerce and Management studies

University of Kalaniya

ACC NO	29830
CALL NO.	332 - 6322 KON

Date of Submission: 04th March 2013



Abstract

Predictability of asset returns has been an immense interest over the past decades. Fundamental analysis and Technical analysis are the two strands of investment decisions. Fundamental analysis involves analyzing the economic factors of a company while Technical analysis interested in the price movements and trading volume in the market.

Fundamental Analysis approach of asset pricing, CAPM model has been subjected to extensive empirical testing in past few decades and shows considerable evidence that not all the markets take the behavior of CAPM. Nimal (1997) and Samarakoon(1997) confirm the above findings for Sri Lankan stock market, surprisingly Sri Lankan stock market still depends on CAPM and make pitfalls to the investors. On the other hand so far no attempt was made to understand the Return- Volume relation in Sri Lankan share market. Therefore this study is to examine the causal relation between Return- Volume in the Colombo Stock Exchange and modeling the causality as well as stock returns and trading volumes.

Variables considered are market return (R_t) and trading volume (V_{ti}) on i^{th} day. Data being used in the study are; All Share Price Index (ASPI), All Share Price Index computed on total returns (ASTRI), Trading volumes of the market, Sector indices computed on total returns and Sector trading volumes on monthly basis. All the data obtained from CSE data library 2011.

It is believed that market returns estimated by ASTRI are more accurate than the same by ASPI, because ASTRI accounted for dividends. As such market returns by ASTRI and market returns by ASPI are compared and found no difference. Then Autocorrelation and stationary of returns and trading volumes were tested by Ljung-Box Q (LBQ) statistic. Stock returns are autocorrelated and stationary, trading volumes are autocorrelated but not stationary.

Results of Causality tests or Multivariate tests reveal that there is no causal relationship between market returns and trading volumes. Causality could not be tested on sector

returns and trading volumes, due to incompleteness or discontinuity of sector trading volumes.

ARIMA models were tested on total market returns and concluded that the best model for forecasting stock returns is ARIMA (0, 0, 1). Various trend models are tested on market trading volumes and found Quadratic Trend model the best.

Most of the early studies give evidence for causal relation between stock returns and trading volume, but our test results do not. This may be due to nature, but some doubts aroused about Sri Lankan stock market index calculation methodology and probability distribution of returns. Therefore we recommended further studies on index calculation and identifying probability distribution of returns. Further we suggest testing return volume relationship by GARCH/ ARCH models, Fourier series, Artificial Neural networks etc. and non-linear models, such as Malthus model, Gomperts model, Alometric model etc.

Key words: Predictability, CAPM, Stationary, ARIMA, Causality.

TABLE OF CONTENTS

	Page number
Cover page	i
Certification of the Supervisor	ii
Declaration	iii
Abstract	iv
Acknowledgement	vi
Table of contents	vii
Appendix 1	x
List of figures	xi
List of tables	xii
CHAPTER 1: INTRODUCTION	
1.1 Background of the research	1
1.2 Research Problem	2
1.3 Objectives of the Study	3
1.4 Significance of the study	4
1.5 Organization of the thesis	5
CHAPTER 2: LITERATURE REVIEW	6

2.1 Introduction	6
2.2 Previous research	6
CHAPTER 3: METHODOLOGY	
3.1 Introduction	29
3.2 Conceptualization	29
3.3 Testing Hypotheses	32
3.4 Operationalization	33
3.4.1 Share Trading in Sri Lanka and Colombo Stock Exchange	35
3.5 Techniques and Models used in data analysis	38
3.5.1 Time Series Univariate Techniques	39
3.5.2 Time Series Multivariate Techniques (Causal Relations)	42
3.5.3 General Linear Processes (GLP)	43
3.5.4 Ljung-Box Q (LBQ) statistic	44
3.5.5 T-Test	45
CHAPTER 4: RESULTS & DATA PRESENTATION	
4.1 Introduction	46
4.2 Comparison of total market returns by ASPI and ASTRI.	46
4.3 Testing auto correlations and stationary of stock returns and trading volumes.	48
4.4 Testing causal relationship (Multivariate) between return and volume.	55
4.5 Modeling market returns and trading volumes	59

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS	
5.1 Introduction	66
5.2 Conclusions	66
5.2 Recommendations	67
REFERENCES	72