IMPACT OF THE MACROECONOMIC VARIABLES ON ALL SHARE PRICE INDEX: GARCH-X APPROACH

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Declaration

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Abstract

This study examines the dynamic impact of macroeconomic variables on all share price index (ASPI) volatility. Data were collected for the period commence from January 2006 to December 2015 using Central Bank annual reports and publications of Colombo stock exchange. Money supply, interest rates, consumer price index, exchange rate, and industrial production index were used as macroeconomic variables of the study. The AR(1)-GARCH (1, 1)-X model was identified as the significant model to model volatility of all share price index series. It was found that the previous all share price index (lag 1) positively and significantly affects the current all share price index implying that the volatility of stock market prices is affected by related news from the previous period (lag 1) more than by past volatility. Negative values of two parameters of the GARCH indicates that shocks to the conditional variance take a short time to die out, so volatility is not persistent. The result further implies that the volatility in interest rate and industrial production index are highly impact for the volatility of all share price index. The Johansen-Juselius cointegration test suggested that macroeconomic variables in the system share a long run relationship. Results imply that, all share price index has significant positive long run relationships with money supply, interest rate & exchange rate while significant negative long run relationships with industrial production index & consumer price index. The results of this study can be utilized for better decision making in share market.

Key words: all share price index, dynamic relationship, macroeconomic variables, volatility

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List of Abbreviations

Abbreviation	Description
ACF	Autocorrelation Function
ADF	Augmented Dickey-Fuller
AIC	Akaike Information Criterions
APT	Arbitrage Pricing Theory
AR	Autoregressive
ARCH	Autoregressive Conditional Heteroscedasticity
ASPI	All Share Price Index
BSE	Bombay Stock Exchange
CAPM	Capital Asset Price Model
CCPI	Colombo Consumer Price Index
CSE	Colombo Stock Exchange
EGARCH	Exponential GARCH
EMH	Efficient Market Hypothesis
EXR	Exchange Rate
FEVD	Forecast Error Variance Decomposition
FPE	Final Prediction Error
FTSE	Financial Times Stock Exchange
GARCH	Generalized Autoregressive conditional Heteroscedasticity
GCC	Gulf Cooperation Council
GDP	Gross Domestic Production
GNP	Gross National Product
GRT	Granger's Representation Theorem
HQ	Hannan-Quinn information criterion
IPI	Industrial Production Index
IR	Interest Rate
IRF	Impulse Response Function
LM	Lagrange Multiplier
LN	Natural Log
LR	Lag Range
LTTE	Liberation Tigers of Tamil Eelam
MA	Moving Average

MS	Money Supply
NSE	National Stock Exchange
OLS	Ordinary Least Squares
PACF	Partial Autocorrelation Function
PGARCH	Periodic GARCH
PVM	Present Value Model
S&P	Standard & Poor
SIC	Schwarz Information Criterion
TGARCH	Threshold GARCH
UK	United Kingdom
US	United States
VAR	Variance Autoregressive
VDC	Variance Decomposition
VECM	Vector Error Correction Model
VMA	Vector Moving Average
WTI	Western Texas Intermediate