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# RELATIONSHIP BETWEEN STOCK RETURNS, TRADING VOLUME AND VOLATILITY: IN BANKING, FINANCE, AND INSURANCE SECTOR OF COLOMBO STOCK EXCHANGE

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## Dedication

This thesis is dedicated to my parents for their love, endless support and encouragement

## Acknowledgements

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## Abstract

Trading volume is one of the most favored proxies for information arrivals. This study investigated the empirical relationship between stock returns, trading volume and volatility for ordinary voting shares of 20 active companies with respect to banking, finance and insurance (BFI) sector in Colombo stock exchange (CSE) during the period from January 2004 to December 2011. The number of trades, the number of shares traded and the turnover were used as different measures of trading volume. This study followed the conventional methodologies used by Brailsford (1996) and Kumar and Singh (2010). The results indicated that a positive and significant correlation between absolute return and trading volume, irrespective of the direction of price change across all three measures of volume. Furthermore, evidence was found supporting the hypothesis that the volume-price change response slope for negative returns is smaller than the response slope for positive returns, thereby supporting an asymmetric relationship. Also, the study found a positive and significant relationship between trading volume and unconditional volatility, irrespective of the direction of price change and an asymmetric relationship between trading volume and unconditional volatility when the number of trades is taken as measure of volume. The vector autoregressive (VAR) model suggested that the information is processed sequentially rather than simultaneously on BFI sector in the CSE. Furthermore, the results of VAR model, Granger causality test, impulse response function and variance decomposition, indicated that in the presence of current and past volume, returns add some predictive power for future volume when the number of trades is taken as measure of volume. In case of trading volume and conditional volatility, the results support for a strong relationship between contemporaneous volume and conditional volatility. Furthermore, the results indicated that the inclusion of contemporaneous volume in the conditional variance equation of returns results a partially reduction of the volatility persistence. As there was no substantial reduction of volatility persistence, there was no strong evidence for the validity of mixture of distributions hypothesis (MDH) in respect of BFI sector in the CSE. Also, the results suggested that the number of trades is a better proxy for information arrivals than other two measures of volume.

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## List of Abbreviations

| Abbreviation | Description |
|---|---|
| ADF | Augmented Dickey Fuller |
| AIC | Akaike Information Criterion |
| ARCH | Auto Regressive Conditional Heteroskedasticity |
| ASPI | All Share Price Index |
| BFI | Banking, Finance and Insurance |
| CBOE | Chicago Board Options Exchange |
| CSE | Colombo Stock Exchange |
| ESE | Egyptian Securities Exchange |
| GARCH | Generalized Auto Regressive Conditional Heteroskedasticity |
| GDP | Gross Domestic Product |
| KLSE | Kuala Lumpur stock exchange |
| MDH | Mixture of Distributions Hypothesis |
| MPI | Milanka Price Index |
| NSE | National Stock Exchange |
| NYSE | New York Stock Exchange |
| OLS | Ordinary Least Square |
| SIAH | Sequential Information Arrival Hypothesis |
| VAR | Vector Auto Regressive |