A STUDY ON RELATIONSHIP BETWEEN STOCK RETURN AND TRADE VOLUME ON SELECTED COMPANIES WITH REFERENCE TO NIFTY 50

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ABSTRACT

This study aims to investigate the relationship between stock return and trade volume on selected companies within the NIFTY 50. The study uses daily data from April 2012 to March 2022 and employs a regression analysis to examine the extent to which trade volume affects stock returns. The selected companies include prominent players from different sectors. The findings reveal that trade volume has a significant positive impact on stock returns, indicating that trading activity is an essential driver of stock price movements. Furthermore, the study also reveals that certain sectors, such as the finance sector. Overall, this study contributes to the understanding of the dynamics between stock returns and trade volume in the Indian stock market and highlights the importance of monitoring trading activity for investors and analysts.

Key words: *relationship, stock return, trade volume, selected companies, NIFTY 50, impact, trading activity, dynamics, monitoring.*

JEL codes: *G10, G14, G17, G18, G23*

I. INTRODUCTION

The trading volume of a financial asset indicates how often it has been exchanged for over a given time period. The quantity of shares traded for equities is a replacement for volume. Traders use volume for futures and options to gauge liquidity and combine volume changes with technical signals to make trading decisions. Volume for futures and options is defined by the number of contracts that have been traded. Observing volume patterns over time may provide insight into the amount of conviction driving gains and falls in specific firms and whole markets. This is also true for option traders, since trading volume measures the current interest in an option. Technical analysis and other trading strategies are significantly influenced by volume and it is showed with technical indicators.

A stock return is the calculation of a stock's return percentage over a specific time frame. Changes in share price, corporate actions like spinning off and splitting off and eventually capital returns in the form of one-time and recurring dividends are all necessary inputs for the computation.

The trading volume is analysed using the following criteria: price movement, exhaustion gap volume and moves, bearish and bullish signals, confirmation of moves, volume history. Similarly, stock returns are analyzed using Price earnings share ratio, Earnings per share, Price to growth, Price to sales, Price to book, Equity and Assets return, Payout of yield and dividend.

II. REVIEW OF LITERATURE

Sl. No	Particulars
1	Shiu-Sheng Chen (2012) "Revisiting the empirical linkages between stock returns and trading volume", The purpose of this study is to look at the asymmetry of the return-volume relationship in bull and bear stock markets, as well as if the empirical associations between trading volume and stock return vary with stock market volatility. The returns and volume are favourably correlated in bull markets, they are negatively correlated in bear markets.
2	Bramantyo Djohanputro (2011) "Market Return, Volatility and Trading Volume dynamics after Economic Crisis", The investigation focuses on the Indonesian Stock Exchange from the aftermath of the economic collapse to the subprime mortgage crisis. The Indonesian capital market is expected to move dramatically from its pre-crisis status. In terms of their relationships, traders are supposed to use the information included in trading volume.
3	William A. Brock and Blake D LeBaron (1995) "A Dynamic Structural Model for Stock return volatility & Trading volume", The primary hypothesis of this study, which holds that the price of the trading process is determined by the trading process itself, necessitates the development of a structure model that can gather information on asset returns and reading volume.
4	John Y. Campbell, Sanford J. Grossman and Jiang Wang (2014) "Trading Volume and Serial Correlation in Stock Returns", To investigate the relationship between total stock market trading volume and the serial correlation of daily stock returns. This study presents a stunning insight concerning the short-term stock market behaviour. We have made the counter-argument that trading volume is generated by risk-averse market makers accommodating random variations in noninformational traders' stock demand.
5	Andrew W. Lo and Jiang Wang (2001) "Stock market trading volume", According to the study, economic forces and market operations determine volume and prices. The literature on financial markets has concentrated on examining the behaviour of returns based on simplistic assumptions about the market, such as allocational and informational efficiency.
6	Bong-Soo Lee, Oliver M Rui (2000) "The dynamic relationship between stock returns and trading volume: Domestic and cross-country evidence", According to the study, contrary to theoretical model expectations, trading volume does not Granger-cause stock market returns on each market, and a positive feedback occurs between tarding volume and return volatility.
7	Sarika Maharajan, Balwinder Singh (2009) "The Empirical Investigation of Relationship between Return, Volume and Volatility Dynamics in Indian Stock Market", Using daily data from India's primary stock exchange, the BSE, this study explores the relationship between stock market return, volume, and volatility dynamics. The study found a positive and significant relationship between volume and return volatility, lending credence to both the mixture of distribution and sequential arrival theories of information flow.
8	Louis Gagnon and G. Andrew Karolyi (2009) "Information, Trading Volume, and International Stock Return Comovements: Evidence from Cross-Listed Stocks", In this study, discovered a novel aspect of the dynamic relationship between stock returns and trading volume, namely that high-volume days are associated with predictable patterns in cross-correlations between various stock returns, as well as predictable patterns in serial correlation of stock returns.
9	Pradeep K Yadav (1992) "Event studies based on volatility of returns and trading volume- A review", The purpose of this article is to provide a systematic evaluation of event studies based on return volatility and trading volume. The rationale for such investigations has been briefly discussed, as have the fundamental methodological issues involved. The volume-volatility relationship and its significance in this context have also been emphasised.
10	Bipin B. Ajinkya, Prem C. Jain (1989) "The behavior of daily stock market trading volume", The study examines three trading volume definitions and two expectation models to quantify excess (abnormal) trading utilising simulation processes with real-world data, as well as features of many statistical tests that could be used in trading volume event investigations.

III. DATA AND METHODOLOGY

Objectives:

- To study the selected stocks returns on trade volume.
- To examine the trend of volume of trade and returns of stock.
- To evaluate the correlation between returns of stock and trade volume.
- To check the causality relation between returns of stock and trading volume.

Hypothesis:

H0: There is no significant relationship between trade volume and stock returns.

H1: There is a significant relationship between trade volume and stock returns.

Type of Research:

This article uses Descriptive research to examine how trade activity and returns of stock are related.

IV. DATA ANALYSIS AND FINDINGS

Table 1: Return to Volume (Correlation)

Sl.No	Company	Return to Volume
1	Infosys	-0.015801133
2	Wipro	0.056613446
3	SBI	0.01587089
4	Bharti Airtel	0.031901814
5	Cipla	0.054199356
6	Nifty	0.022938418

Interpretation:

The above table shows that 10 years of trading volume and stock return data are taken into account. According to this correlation test, there is a substantial association between trading volume and stock return, with certain companies being positively correlated, such as Wipro, SBI, Bharti Airtel, Cipla, and Nifty, and Infosys being negatively correlated.

Table 2: CAPM

Security	Actual	
	Return	Beta
Infosys	0.0224	0.1178
Wipro	0.0360	0.0285
SBI	0.0210	-0.0207
Bharti Airtel	0.0513	0.0980
Cipla	0.0626	0.0141

Beta Calculation	
$Ri = Rf + \beta (Rm - Rf)$	
Infosys	3.2580
Wipro	3.5859
SBI	3.7659
Bharti Airtel	3.3334
Cipla	3.6389

Interpretation:

According to the above CAPM calculation table, each company will provide a distinct return on investment. For example, an investor can earn a return of Cipla 0.0626 * 100 = 6.26% by investing.

Table 3 Regression analysis:

Table 3.1 Regression analysis for Infosys

Regression analysis of Returns to Nifty Index

Regression Statistics	
Multiple R	0.0509744
R-square	0.002598389
Adjusted R-square	0.00219491
Std error	1.071947965
Observations	2474

Anova					
	df	S.S	M.S	F	Significance F
Regression	1	7.399971697	7.399971697	6.439952291	0.011219103
Residual	2472	2840.507073	1.149072441		
Total	2473	2847.907045			

	Coefficient	Std error	t-statistic	P value	Lower(95%)	Upper (95%)	Lower-95.0%	Upper-95.0%
Intercept	0.053456701	0.021552202	2.480335959	0.013191976	0.011194469	0.095718932	0.011194469	0.095718932
Nifty Index	0.022059815	0.008692817	2.537706108	0.011219103	0.005013861	0.03910577	0.005013861	0.03910577

Interpretation:

According to the table above, the R-Square value is 0.002598, or 0.2598%. This shows that the Returns varies by 0.2598% which indicates that the Nifty Index has an effect on Returns of 0.2598%. For every unit change in the Nifty Index, the Returns is positively impacted by 2.2%. If the Nifty Index increases by one unit, the Returns will decrease by 2.2%. If the Nifty Index falls by one unit, the Returns will increase by 2.2%.

Regression analysis of Trading Volume to Nifty Index

Regression Statistics	
Multiple R	0.613982973
R-square	0.376975091
Adjusted R-square	0.376723059
Std error	160.7545932
Observations	2474

Anova					
	df	S.S	M.S	F	Significance F
Regression	1	38652936.44	38652936.44	1495.738634	2.6645E-256
Residual	2472	63881520.95	25842.03922		
Total	2473	102534457.4			

	Coefficient	Std error	t-statistic	P value	Lower(95%)	Upper(95%)	Lower-95.0%	Upper-95.0%
Intercept	44.29663829	7.177867275	6.171281329	7.89187E-10	30.22138534	58.37189124	30.22138534	58.37189124
Nifty Index	0.003315104	8.57175E-05	38.67478033	2.6645E-256	0.003147018	0.003483189	0.003147018	0.003483189

Interpretation:

According to the table above, the R-Square value is 0.3769, or 37.69%. This shows that the Trading volume varies by 37.69% which indicates that the Nifty index has an effect on Trading volume of 37.69%. For every unit change in the Nifty Index, the Trading Volume is positively impacted by 0.33%. If the Nifty Index increases by one unit, the Trading Volume will decrease by 0.33%. If the Nifty Index falls by one unit, the Trading volume will increase by 0.33%.

Findings:

- For regression over the long term, there is a sizable link between stock return and trade volume.
- The Returns to volume table demonstrates that stock return and trading volume data spanning 10 years were considered which indicates that there is a strong relationship.
- The findings of the regression study for Infosys, Wipro, Bharti Airtel, and Cipla with regard to Nifty returns show a favourable association.
- Infosys' returns fluctuate by 0.2598%, impacting Nifty's returns by 0.2598%. Nifty's effect on returns is 2.2%. Trading volume for Infosys changes by 37.69%. Nifty influences trading volume by 37.69%, increasing it by 0.33% for every unit movement.

V. CONCLUSION

The research aims at the 10-year trend in returns and trading volume for five chosen Nifty companies and the Nifty 50. Analysis has been done using approaches including regression, correlation, and the Capital Asset Pricing Model (CAPM). Trade volume changes will have a small impact on the NIFTY where as the change in stock returns will not cause any effect on the Nifty index. Through this analysis, I was able to determine that the relationship between volume of trade and stock returns is positive; however, stock return has no bearing on trade volume, and vice versa; additionally, when a single business showed negative reaction in the movement of the stock return to Nifty return. As a result, it is clear that the return, the volume of trades in companies, and the Nifty index are all related.

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