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Long and Short-Run Effects of Mode-wise Trade Volume on Nifty Returns : A VECM Model Approach

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Abstract

SEBI has encouraged infusing of smart order routing, colocation, internet, mobile and algorithmic trading since 2008 along with non-algo trades. This has altered the stock market ecosystem. The study is unique as it examines the relationship between return and the nature of volume movement in different modes of trading. The long-run relationship of the mode-wise trade movement is established using the cointegration test, followed by which the study employs the VECM model to present the long and short-run dynamics of the cointegrated series. The result shows that independent mode-wise trade volume causes change patterns in NIFTY returns to a notable extent. The causal relationship is evaluated to identify if the movement pattern in one trading mode has any useful signal for other traders.

JEL Code : G1, G12
Keywords : Trading; Machine Trade; Volume; Volume-return; Soups; NSE; India

I. Introduction

THE EVOLUTION OF technology has altered market microstructure, Stoll (2006). Trade volume, return, price, and volatility are driven by economic forces (Sengupta, Dutta and Dutta, (2019), Baranidharan and Dhivya (2019)) and the study contains useful information to assess market function. The volume of trading is an important aspect of the stock market that represents an economic relationship between stock and traders, Lo and Wang (2010). Volume indicates fundamental and psychological factors that drive stock price. The trade movements in different modes of trading is viewed as proxy for flow of information and technology influence. In terms of volume generated by different types of traders, the existing literature presents

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References

Agarwal, J.D. and Aman Agarwal, (2004), "*Literature in Finance Vol IV : Financial Systems and Markets*" IIF Publications, Delhi

Agarwal, Yamini, (2013), "*Capital Structure Decisions under Multiple Objectives: A Study of Indian Corporates*", IIF Publications, Delhi.

Ainapure, Varsha, and G. Iyer, (2017), "An empirical analysis into relationship between foreign institutional investments (FIIs) and stock market.", *Finance India*, Vol. 31, No. 4, pp.1285-1294.

Aitken, M., D. Cumming and F. Zhan, (2017), "Trade size, high-frequency trading, and colocation around the world.", *The European Journal of Finance*, Vol. 23, No. 7-9, pp.781-801.

Aswini, A., and M. Kumar, (2014), "Impact of FII on Stock Market in India.", *Global Journal of Finance and Management,* Vol. 6, No. 8, pp.765-770.

Baranidharan, S., and N. Dhivya, (2019), "Empirical relationship among various macroeconomic variables on Indian Stock Market and Japanese Stock Market.", *Finance India*, Vol. 35, No. 3, pp.787 – 800.

Bouri, E., C.K.M. Lau, B. Lucey and D. Roubaud, (2019), "Trading volume and the predictability of return and volatility in the cryptocurrency market.", *Finance Research Letters*, Vol. 29, 340-346.

Brailsford, T. J., (1996), "The empirical relationship between trading volume," *returns and volatility. Accounting and Finance,* Vol. 36, No.1, pp.89-111.

Chandra, A., (2012), "Cause and effect between FII trading behaviour and stock market returns: The Indian experience.", *Journal of Indian Business Research*, Vol. 4, No. 4, pp.286-300.

Chen, G. M., M. Firth and O.M. Rui, (2001), "The dynamic relation between stock returns, trading volume, and volatility.", *Financial Review,* Vol. 36, No. 3, pp.153-174.

Cheriyan, N. K., and D. Lazar, (2019), "Relationship between liquidity, volatility and trading activity: An intraday analysis of Indian stock market.", *International journal of economics and financial issues*, Vol. 9, No. 1, p.17.

Fugazza, M., and A. Nicita, (2013), "The direct and relative effects of preferential market access.", *Journal of International Economics*, Vol. 89, No. 2, pp.357-368.

G. Nuti, M. Mirghaemi, P. Treleaven and C. Yingsaeree, "Algorithmic Trading", *IEEE - Computer*, Vol. 44, No. 11, pp. 61-69, Nov. 2011

Gallagher, D. R., P.A. Gardner and P.L. Swan, (2013), "Governance through trading: Institutional swing trades and subsequent firm performance.", *Journal of Financial and Quantitative Analysis*, Vol. 48, No. 2, pp.427-458.

Hou, J., (2015), Online Stock Trading: Do Demographics, "Internet Usage, and Attitudes Matter?.", *International Journal of Business and Social Science*, Vol. 6, No. 2.

Jena, S. K., A.K. Tiwari, S. Hammoudeh and M. Shahbaz, (2020), "Dynamics of FII flows and stock market returns in a major developing country: How does economic uncertainty matter?", *The World Economy,* Vol. 43, No. 8, pp.2263-2284.

Kumar, P., S.K. Gupta and R.K. Sharma, (2017), "An empirical analysis of the relationship between FPI and Nifty Returns.", *Finance India,* Vol. 34 No. 3, pp. 943-956.

Lamoureux, C. G., and W.D. Lastrapes, (1990), "Heteroskedasticity in stock return data: Volume versus GARCH effects.", *The Journal of Finance*, Vol. 45, No. 1, pp.221-229.

Lin, C. W., C.Y. Lin and B. Lin, (2013), "Trading signals analysis of mobile trading services.", *International Journal of Mobile Communications,* Vol. 11, No. 2, pp.107-122.

Lo, A. W., and J. Wang, (2010), "Stock market trading volume.", *In Handbook of financial econometrics: Applications,* pp. 241-342. Elsevier.

Maglaras, C., C.C. Moallemi and H. Zheng, (2014), "*Queueing dynamics and state space collapse in fragmented limit order book markets*.", Columbia Business School Research Paper, pp.14-13.

Mahajan, S., and B. Singh, (2009), "The empirical investigation of relationship between return, volume and volatility dynamics in Indian stock market.", *Eurasian Journal of Business and Economics,* Vol. 2, No. 4, pp.113-137.

Mardy Chiah, Angel Zhong, (2020), "Trading from home: The impact of COVID-19 on trading volume around the world", *Finance Research Letters,* Vol. 37.

Mitra, S. K., (2011), "How rewarding is technical analysis in the Indian stock market?" *Quantitative Finance*, Vol. 11, No. 2, pp.287-297.

Naik, P. K., and T.K. Sethy, (2022), "Stock Returns, Trading Volumes and Market Volatility: A Study on the Indian Stock Market.", *The Indian Economic Journal*, Vol. 70, No. 3, pp. 406-416.

Sengupta, Suchismita, Aloy Dutta and Avijan Dutta, (2019), "An empirical study of the effect of macro-economic factors on the stock market: An Indian perspective.", *Finance India,* Vol. 33, No. 1, pp. 113-134.

Srivastava, P., and S. Varshney, (2020), "The relationship of domestic institutional investors and India stock market returns: An ARDL bound testing approach.", *Journal of Transnational Management*, pp.1-20.

Stoll, H. R., (2006), "Electronic trading in stock markets.", *Journal of Economic Perspectives,* Vol. 20, No. 1, pp.153-174.

Sultana, S. T., and S. Pardhasaradhi, (2012), "An empirical analysis of factors influencing Indian individual equity investors' decision making and behavior.", *European Journal of Business and Management,* Vol. 4, No. 18, pp.50-61.

Sultana, S. T., and S. Pardhasaradhi, (2012), "Impact of flow of FDI and FII on Indian stock market.", *Finance Research*, Vol. 1, No. 3, pp.4-10.

Tai, Y., and Y. Ku, (2013), "Will stock investors use mobile stock trading? A benefit-risk assessment based on a modified utaut model.", *Journal of Electronic Commerce Research*, pp.14, 67.

Tripathy, N., (2010), "The empirical relationship between trading volumes and stock return volatility in Indian stock market.", *European Journal of Economics, Finance and Administrative Sciences,* Vol. 24, No. 1, pp.59-77.

Verma, R., and P. Verma, (2007), "Noise trading and stock market volatility.", *Journal of Multinational Financial Management,* Vol. 17, No. 3, pp.231-243.

Wang, J., (1994), "A model of competitive stock trading volume.", *Journal of Political Economy,* Vol.102, No. 1, pp.127-168.