



A STUDY OF STOCK RETURN UNPREDICTABILITY AND TRADING VOLUME

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ABSTRACT:

This paper observationally looks at the connection between stock return unpredictability, exchanging volume furthermore, offer solicit spread inside the degree from blend of dissemination speculation (MDH) and consecutive data landing theory (SIAH) in the Indian securities exchange utilizing high recurrence 5-minute informational collection over the time of 2 July 2012 to 31 December 2012. This is the main sort of concentrate in India utilizing offer ask spread as an extra data variable alongside exchanging volume to explore the association with stock return instability. Our observational discoveries give proof of a positive contemporaneous connection between return instability and exchanging volume, and furthermore between return instability and offer ask spread. Additionally, the aftereffects of Granger causality test demonstrate that the data substance of exchanging volume and offer approach spread are valuable for anticipating stock return unpredictability. Our outcomes show that data landing to financial specialists has a tendency to take after a consecutive as opposed to a synchronous procedure. This finding is steady with the successive data landing speculation and negates the blend of dissemination theory.

KEYWORDS – Intraday, Volatility, Trading Volume, Bid-Ask Spread, Granger Causality, MDH, SIAH

1. INTRODUCTION

The association between stock return unusualness and trading volume has been the matter of subject for a couple of correct examinations over the earlier years. The significant motivation for these investigations is the focal pretended by exchanging volume in the evaluating of money related resources through the landing of new data. It has been recommended that there exists a positive contemporaneous connection between return instability and exchanging volume in money related markets. At the hypothetical level, the presence of such a positive relationship clarified chiefly by two noteworthy basic speculations; the blend of dispersion theory (MDH) and the consecutive data entry speculation (SIAH).

Blend of circulation theory (MDH) of Clark (1973), Epps and Epps (1976), Tauchen and Pitts (1983) and Harris (1986) contends that stock return unpredictability and exchanging volume ought to be emphatically related in light of the fact that they mutually rely upon a typical factor, which is thought to be the stream of new data in the market. The more data touches base at the showcase, the more volume it will make and the more stock costs will have a tendency to vacillate. In MDH, balance costs are instantly settled and new data is spread at the same time to every one of the merchants. The suggestion is that, with concurrent data entry there is no data in the past volume that can be utilized as a part of estimating future instability that are not yet contained in the past instability. Thus, the blend of conveyance theory underpins just positive contemporaneous relationship however no causal linkage between exchanging volume and return instability.



The consecutive data entry theory (SIAH) proposed by Copeland (1976) and talked about further in Jennings et al. (1981) recommend that the new data is scattered consecutively instead of all the while to every one of the brokers. In these models, some broker watches the data in front of the market and exchange on it, in this way making volume and unpredictability. Thus, volume and unpredictability move same way. Henceforth, there is a positive contemporaneous relationship exists amongst instability and volume. Smirlock and Starks (1988) have additionally broadened the speculation that as the data comes consecutively, the past benefits of exchanging volume may be able to foresee future unpredictability and the other way around, which implies that a causal relationship may exist in either headings amongst unpredictability and volume.

The contemporaneous and causal connection between stock return unpredictability and exchanging volume has additionally been the subject of a significant stream of experimental examinations. Lee and Rui (2002) found verification of a positive contemporaneous and furthermore a feedback connection between trading volume and insecurity in US, UK and Japanese markets. Leon (2007) found that trading volume had insightful power for stock return precariousness in the regional stock exchange of the West African Economic and Monetary Union. Khan and Rizwan (2008) investigated the association between return insecurity and trading volume in Pakistan's securities trade and found a positive contemporaneous association between them. Meanwhile they watched that there exists a bidirectional causal association among precariousness and volume. Medeiros and Doornik (2008) found the assistance for a positive contemporaneous and furthermore bidirectional causal association between return shakiness and trading volume in Brazilian securities trade. Mahajan and Singh (2009) followed a positive contemporaneous connection between return instability and exchanging volume in the Indian securities exchange. Their investigation likewise gave proof of one-way causality from instability to exchanging volume. Thammasiri and Pattarathammas (2010) found a positive contemporaneous association between return unsteadiness and trading volume in TFEX feature, nevertheless, no causal association from trading volume to return precariousness was set up. Tripathy (2011) broke down the Indian market and found a positive contemporaneous and bidirectional causal association between return insecurity and trading volume. Chuang et al. (2012) inspected the Asian markets and found affirmation of a positive contemporaneous relationship for 6 out of 10 markets. Their examination likewise gave some proof of bidirectional causal relationship for 8 out of 10 markets. Also, a critical causality running from instability to volume was identified just for China. They didn't locate any causal impact for Thailand. Choi and Kang (2013) found a positive volume-unpredictability relationship for four Asian markets: Korea, Japan, China and Hong-Kong. Their examination discovered volume causes instability in instances of Hong-Kong, China also, Japan though instability causes volume in instances of Hong-Kong, China and Korean market. Celik (2013) likewise discovered confirmation of a positive connection amongst instability and volume in Istanbul securities exchange both in pre-emergency and post-emergency periods while bidirectional causality was followed in post-emergency period and in pre-emergency period no causality was built up.

Research on showcase microstructure likewise engaged in clarifying and investigating offer inquire spread and its association with value changes and instability. In the writing it is generally reported that intraday varieties of offer ask spread and intraday return instability are normal to be decidedly corresponded in light of the fact that a data landing should invigorate an expansion in unpredictability which thusly enlarges the offer ask spread (Copeland and Galai, 1983; Glosten and Milgrom, 1985; Richardson, 2000; Wang and Yau, 2000; Rahman et al. 2002).

In accordance with the market microstructure hypothesis, a few examinations likewise experimentally analyzed the connection between return instability and offer solicit spread and discovered proof from a huge positive connection between them. Such examinations incorporate Wei (1991), Bollerslev and Melvin (1994), Galati (2000), McGroarty et al. (2009), Gtifa and Lioune (2013) in outside trade market, Ding and Chong (1997), Wang and Yau (2000), Frank and Garcia (2011), Wang et al. (2014) in prospects market and Rahman et al. (2002) and Hussain (2011) in value showcase.

A lot of exertion has made, observationally and hypothetically, to get it the connection between stock return unpredictability and exchanging volume. Despite the fact that most of the discoveries have affirmed the presence of a positive contemporaneous connection between return instability and exchanging volume, the investigations of various securities exchanges have given blended comes about the causal relationship. Essentially with regards to India, Tripathy (2011) found the confirmation of causality from volume to unpredictability though Mahajan and Singh (2009) did not follow any causal relationship from volume to unpredictability. Strangely enough none of the examinations in India concentrated on intraday relationship. Also, spread-instability connection has not been investigated generally and along these lines the relationship is vague. Especially in Indian setting, there is moderately a deficiency of research on this viewpoint. In this way, in the present examination, we made an endeavor to exactly research the intraday contemporaneous and also the causal connection between return unpredictability, exchanging volume and offer approach spread for 50 loads of S&P CNX NIFTY record to connect this exploration hole.

2. DATA AND VARIABLES DESCRIPTION

Our essential informational collection comprises of exchange value, exchanging volume, and the nearby offer and inquire quote for every 5-minute interims from 2 July 2012 to 31 December 2012 for every one of the loads of S&P CNX Nifty Index between exchanging timing 09:15 am to 15:30 pm IST. S&P CNX Nifty Index is a very much differentiated 50 stock file representing 25 divisions of the Indian economy. Table A1 gives the rundown of organizations and their industry write. Every one of the information are acquired electronically from Bloomberg terminal.

Stock return unpredictability, exchanging volume and offer approach spread are significant for this examination. The rate return of the stock is characterized as $(R_t = \log P_t P_{t-1}) * 100$, where R_t is the logarithmic rate return at time t and P_t speaks to current 5 minutes interim exchanging cost and P_{t-1} is the exchanging cost for quickly going before five minutes interim. Following Leon (2007), Medeiros and Doornik (2008) and Tripathy (2011), squared return (R_t^2) is utilized as measures of value instability.

Following Wei (1991), Abhyankar et al. (1997) and Hussain (2011), the 5-minute relative offer ask spreads are computed as $S = Ask - Bid / [(Ask + Bid) / 2]$.

Next, the exchanging volume is the aggregate number of offers exchanged at every five moment interim. Following Tian and Guo (2007) and Al-Jafari and Tliti (2013), the examination utilizes logarithmic estimation of volume rather than crude volume to enhance the ordinariness properties of the arrangement.

3. EMPIRICAL FINDINGS

3. 1. Unit Root Test

The ADF and PP test insights are accounted for in Table A2, A3 and A4 separately for return instability (squared return), volume and spread. The outcomes demonstrate that the invalid theory that return instability, exchanging volume and offer ask spread are non-stationary (i.e. has a unit root) is rejected at 1% of level for all the arrangement. This affirms all the arrangement are stationary for each one of the stocks and are in this manner, appropriate for advance factual examination.

a. Cross-Correlation Analysis

As the initial step, to explore the connection between unpredictability, volume and spread, we processed the cross-relationship coefficients for every one of the stocks. The relationship coefficients are announced in Table A5. We discovered return unpredictability is emphatically connected with exchanging volume and slacked exchanging volume if there should be an occurrence of all the 50 stocks. We additionally discovered positive connection between's return instability and spread if there should arise an occurrence of 90% of the stocks aside from COAL, ICICIBC, LT, TPWR and TTMT. Also, return instability is decidedly connected with slacked spread if there should arise an occurrence of 92% of the stocks with the exception of COAL, LT, TPWR and TTMT. The slacked relationship gives a sign for causal relationship.

3.3. Contemporaneous Relationship between Volatility and Volume

The consequences of the OLS relapse utilizing condition 1 to clarify the contemporaneous relationship amongst instability and volume are accounted for in Table A6. The parameter β_1 , which measures the contemporaneous connection amongst instability and volume, is factually huge and positive for all the 50 stocks, recommending a positive contemporaneous connection between return instability and volume.

At long last, the relapse comes about additionally demonstrate that contemporaneous volume clarifies a moderately little segment of return instability as confirm by low R-square esteems. This powerless positive contemporaneous connection between exchanging volume and return unpredictability demonstrate that, the Indian market is educationally wasteful. The data stream in market may well be dispersed consecutively rather than promptly as required in blend circulation speculation (MDH). This relationship gives a sign of consecutive data stream in Indian advertise.

3.4. Contemporaneous Relationship between Volatility and Spread

The aftereffects of the OLS relapse utilizing condition 2 to clarify the contemporaneous relationship amongst unpredictability and spread are accounted for in Table A7. The parameter β_2 is measurably noteworthy and positive for 40 stocks out of aggregate 50, recommending a positive contemporaneous connection between return unpredictability and spread. We additionally discovered measurably critical negative β_2 for 5 stocks (COAL, ICICIBC, LT, TPWR and TTMT) and measurably irrelevant relationship for outstanding 5 stocks (DLFU, HNDL, INFO, PNB and RBXY). In like manner volume, the contemporaneous spread likewise clarifies moderately a little bit of unpredictability and gives an sign of consecutive data stream in the market.

3.5. Causal Relationship amongst Volatility and Volume

The Granger causality test comes to fruition between return eccentrics and trading volume are represented in Table A8. The slack lengths for the causality test are settled in light of Schwartz information measure (SC) and the picked slack period for each stock are represented in a similar table. The invalid hypothesis that slacked volume does not granger cause return flightiness is rejected if there ought to emerge an event of 44 stocks beside AXSB, BHARATI, GRASIM, HUVR, SBIN and SESA. Then again, the invalid hypothesis that the past shakiness does not granger cause volume is rejected for 35 stocks out of 50. For all these 35 stocks, we likewise discovered input relationship. Just in the event that of AXSB, BHARATI, GRASIM, HUVR, SBIN and SESA, no causality was followed in either heading. The Granger causality comes to fruition show that volume causes precariousness and that the flightiness furthermore causes volume yet in lesser number of cases. This discovering induces that inside the sight of present and past instability, exchanging volume includes some noteworthy prescient power for future return unpredictability.

3.6. Causal Relationship between Volatility and Spread

The Granger causality test comes about between return unpredictability and spread are accounted for in Table A9. The test outcomes demonstrate that the invalid theory that slacked spread does not granger cause unpredictability is dismissed if there should arise an occurrence of 49 stocks with the exception of INFO, while, the invalid speculation that slacked instability does not granger cause spread is dismissed just for 24 stocks. For all these 24 stocks, we likewise discovered input connection between them. Just if there should be an occurrence of INFO, no causality was followed in either heading. This plainly demonstrates within the sight of present and past instability, spread includes some noteworthy prescient power for future return unpredictability.

5. SUMMARY AND CONCLUSION

This examination investigated the contemporaneous and causal association between return precariousness, trading volume and offer ask spread using 5-minutes interval high repeat data from 50 supplies of S&P CNX NIFTY Index over the season of 2 July 2012 to 31 December 2012.

The disclosures give evidence of a positive contemporaneous connection between return unpredictability and exchanging volume and in addition between return instability and spread. In any case, in the two cases the illustrative energy of this contemporaneous connection is frail. This show, the Indian market is instructively wasteful and the data stream in market may well be dispersed consecutively rather than immediately as required in blend appropriation theory (MDH).

Our examination concentrated on the contemporaneous relationship as well as explored the causal connections. We explored the data substance of volume and spread for future returns unpredictability by methods for Granger causality test and found for dominant part of the cases, volume and spread caused return instability.

REFERENCES

- Abhyankar, A., Ghosh, D., Levin, E., and Limmack, R.J., 1997. Bid-ask spreads, trading volume and volatility: Intra-day evidence from the London stock exchange, *Journal of Business Finance and Accounting*, 24(3-4), pp.343-362. <http://dx.doi.org/10.1111/1468-5957.00108>
- Al-Jafari, M.K. and Tliti, A., 2013. An empirical investigation of the relationship between stock return and trading volume: Evidence from Jordanian banking sector. *Journal of Applied Finance & Banking*, 3(3), pp.45-64.
- Bollerslev, T. and Melvin, M., 1994. Bid-ask spreads and volatility in the foreign exchange market: An empirical analysis. *Journal of International Economics*, 36, pp.355-372. [http://dx.doi.org/10.1016/0022-1996\(94\)90008-6](http://dx.doi.org/10.1016/0022-1996(94)90008-6)
- Celik, S., 2013. New evidence on the relation between trading volume and volatility. *Business and Economic Research*, 3(1), pp.176-186.
- Choi, K.H. and Kang, S.H., 2013. Relationship between stock returns and trading volume: domestic and cross country evidence in Asian stock markets. In: R. Neck, ed. 2013. *Recent advances in business administration, marketing and economics: Proceedings of the 2013 International Conference on Economics and Business Administration (BAME 2013)*. Venice: BAME. pp.33-39