Examining the association between stock return and seasonally adjusted trade in India: A strategic approach to Indian stock market during the period of the Covid-19 pandemic

N. Viswa Nadham ^{(a)*} Piyali Roy Chowdhury ^(b) Roopashree Rao ^(c)

^(a)Faculty of Business Administration, Department of Accounting and Finance, St. Augustine University of Tanzania, Tanzania

^(b)Assistant Professor, Department of MBA, CMR Institute of Technology, Bengaluru, India

^(c)Associate Professor, Som-Lalit Institute of Management Studies, Ahmedabad, India

ARTICLE INFO

Article history:

Received 28 November 2021

Received in rev. form 20 Dec. 2021

Accepted 22 December 2021

Keywords:

Panel vector Auto regression, Panel Granger causality, Indian Banking sector, Covid-19, Pandemic.

JEL Classification:

G21, H80, N25, O16

ABSTRACT

This paper aims to examine the association between Indian stock market return and seasonally adjusted trade for Indian Banking sector shares. The objective of the study is to measure the association between stock return and seasonally adjusted trade in the Indian stock market and recommend strategies. Due to the Covid 19 outbreak banking sector was highly affected, the Government of India also announced a moratorium on all categories of loans, banking business majorly depending on the deposit and loan creation, so the Government decision threaten the banking sector. Many private sector banks terminated temporary staff because of cut cost policies. We divided the banking sector into three segments. Namely, Public, Private and Small Finance Banks. Utilizing daily data from February 2020 to July 2020, consisting of 2196 in numbers, we ran a panel Vector Autoregression model to analyze the association. It was found that the return of stocks is influencing the volume of trade during this period. Also, while measuring the short-run causality, it is found that the return of banking stocks specifically granger causes the volume of trade. The suggestions of the study lie in providing importance to framing policies on improving the financial health of the economy through different fiscal policies. Strategic policies are required to face post-Covid situations. The turnaround strategies to combat the effects of the pandemic are characterized by the availability of the sustainable resources of the particular sector in consideration.

© 2021 by the authors. Licensee SSBFNET, Istanbul, Turkey. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Introduction

Banks are the backbone of the economy that provide income and generate funds. The pandemic has created various societal and economic problems in India. Various business firms facing different problems at all levels like, Production, HR, Finance and Marketing areas. Many small firms are unable to survive and shut down their operations for a while. It is clear that business firms around the globe are experiencing serious outbreaks of pandemic. Major victims of COVID 19 are banking institutions, which are dealing with public deposits and different sectoral loans. The pandemic has caused businesses to close, leading to disruption of commerce and business activities. Although our economy had an experience of various pandemics in the previous years, it is an evident that it becomes exceedingly difficult to estimate societal, economical, psychological issues that have not been observed to a great extent in the past.

* Corresponding author. ORCID ID: 0000-0003-4200-3675

© 2021 by the authors. Hosting by SSBFNET. Peer review under responsibility of Center for Strategic Studies in Business and Finance.
<https://doi.org/10.20525/ijrbs.v10i8.1487>

Citation: Nadham, N. V., Chowdhury, P. R. ., & Rao, R. (2021). Examining the association between stock return and seasonally adjusted trade in India: A strategic approach to Indian stock market during the period of the Covid-19 pandemic. *International Journal of Research in Business and Social Science* (2147- 4478), 10(8).

This pandemic which is caused by a virus named as novel corona virus owing to its novelty is creating uncertainty regarding all aspects encompassing the treatment, the duration, the possibility of the emergence of the second wave, the effectiveness of the various norms that are used and to be used which is adding to the anxiety and confusion in already distraught minds of the people. The whole world is waiting for the arrival and implementation of the required and effective medical interventions which will upturn and swing the industry, economy and the consumer spending patterns which will rebalance the demand and supply and bring back the whole economy back to the pre-covid times, to enable the world to move ahead. The outbreak of Covid pandemic shook the economy of the globe and the ripples were witnessed all over. Various strategies were implemented to contain this pandemic and the nationwide lockdown was one of the important steps that was implemented.

The disruption that ensued had a great effect on the demand and supply balance of market as a whole, which disturbed the employment scenario as well. This disruption in the demand supply balance affected the industrial players who were forced to keep the business going despite the decrease in the inflow of revenues. The financial arm of the nation stood up to the situation in leaving no stones turned to keep the money flow intact. In banks mainly Mortgage loan issues, NPAs, credit risk, interest rate risk, work force, cash flow, funds flow, asset liability management issues, debtors' management, working capital management, credit management, operating model issues, additional customer services and business development will affect highly.

Looking into the above-mentioned effects of the pandemic, it has not only affected the economic scenario, but as witnessed it has scarred the mental and health status and wellbeing of the people which has in turn disturbed the social scenario of the entire world. The impact on capital markets and increased volatility, and down trend of share prices of Banks have impacted on the overall finance sector of the economy. The banking sector faces widespread payment issues. To address these working capitals, AL composition, liquidity challenges the government has to take initiative steps. The various banking, Insurance and other financial institutions represent and contribute to the majority to the growth of the economy. The effect of this pandemic is cast all over the above sector which is well marked by the various unwanted movements of the stock market. It can be well reminiscence that the particular effect of the pandemic was also witnessed earlier during various other well-known pandemics. Any how these current challenges will not guarantee an assured future. Shares of the bank declined and reached all time low during pandemic. Highly uncertain situations because of the pandemic, banks need to change their portfolios based on their business range and market share. Considering the current Indian investment situation, in this research we explore the association between volume of the trades in Indian stock market and return of the shares by applying Panel Vector Autoregression (VAR) model and Panel Grange causality in response to the COVID 19 outbreak. We have considered Public, Private and Small Finance Banks in this respect. After covid 19 the entire economy had drastic changes particularly banking has directly affected, because of lock down and moratorium on loans. So, the impact is very high and it leads to working capital problems. Private sector banks had severe shortage of funds. So, after covid 19 now banks focus on long term strategies and strict implementation of it. Recovery of loans from SMEs becoming a big issue, credit creation, risk management strategies also changed. Much has been studied on how to measure the relationship between stock volume and return, however the banking sector has been forgotten as most of the research and studies are conducted based on banking shares in general conditions, but there is no any study conducted particularly during pandemic time, hence there are knowledge gap that need to be filled, and this study examines the association between stock and return and seasonally adjusted trade in India.

Thus, the objectives of the study are formulated as follows:

- i. To measure the association between stock return and seasonally adjusted trade in Indian stock market.
- ii. To measure the granger causality between stock return and seasonally adjusted trade in Indian stock market.
- iii. To suggest some strategies to overcome the challenges.

The objectives are followed by statement of hypotheses, as:

- i. H₀₁: There is no relation between stock return and seasonally adjusted trade in Indian stock market
- ii. H₀₂: There is no granger causality running from stock return to seasonally adjusted trade
- iii. H₀₃: There is no granger causality running from seasonally adjusted trade to stock return

Literature Review

The pandemic situation

The various changes the pandemic brought about with respect to economic, social and various environmental and health arena is highlighted in various sections. Enumerating the social consequences on the economic front, the way the industrial scenario unfolds in the future days to come, the way digitization helped, are being concentrated upon. (Gautam., A., Neha, Y., Kriti. S., Kritika., G & Amisha. G. 2020). The dynamics of various other issues like the encouraging of the various health-oriented systems and the various effect of this pandemic on other social dimensions are also dealt upon. (Gautam., A., Neha, Y., Kriti. S., Kritika., G & Amisha. G. 2020). An in-depth analysis conducted based on sources like journals, magazines, newspapers, specialist surveys to study the effect of Corona on the GDP and on the sectors like agriculture and other allied industries like infrastructure, exports and imports, tourism and travel and on various banking and NBFCs, suggests policies in relation to education, FDI, monetary and fiscal policies that should be considered to battle the impact of the pandemic. (Geeta K., (2020).

The volatility of shares during pandemic

The volatility in tandem to risk and returns during the pandemic of the various sectors of the Indian economy facilitated by tracking the closing prices of various stocks of Bombay Stock Exchange and other indices using descriptive ANOVA and CAPM model for the comparison and the Garch model to check volatility indicates a negative return. (Deepmala, J., Preeti, S. (2020). The highly impacted sectors being automobiles, reality and capital goods and induced volatility is observed in the stock market due to the uncertainty. The Garch model is used to predict the volatility and the bouncing of the economy is aspired with the end of the pandemic explained in 2020 by Deepmala and Preethi. The impact of lock down in financial market of India and the reaction of the same was studied using the event study methodology, for an event window consisting of 35 days encompassing 20 days prior and 15 days during the event, wherein 31 companies listed in BSE selected at random. A significant positive average return was observed, and it was observed that the lockdown had an impact on the stock market performance in 2020 by Md, et al.

The impact of lockdown on financial markets

The impact of lock down in financial market worldwide on the banking arena and the performance of the banking stocks in response to various financial policy declarations show that the stress and the crisis has resulted in the underperformance of the banking stocks and a mixed response is witnessed in response to policy effectiveness. The harmful effect of the crisis is subdued by the liquidity support, assistance for borrower and monetary easing but lack the applicability to all banking institutions under all situations. (Asli D. K., Alvaro, P., & Claudia, R. O. (2020). The changes in the total number of cases in India did not have a considerable influence on the Nifty mean which is stated in a study to investigate the impact of lock down in financial market of India, allowing provisions for changes in volatility and the time factor being considered as April 20 and May 20. The changes in the total number of cases in India was not seen having an influence on the Nifty mean as seen by the results calculated on the platform of GARCH (1,1) model also. (Dippi, V. & Praveen Kumar, S. (2020). A positive influence on the conditional variance of Nifty returns is witnessed when the model is tested for auto – correction and arch effect in residual when Correlogram test and Arch L.M. test is used. (Dippi, V. & Praveen Kumar, S. (2020). The impact of the lockdown, the moratorium on the banking, financial services and the insurance sector can be overcome by implementing certain actions which would enable better services which would result in minimized revenue loss to the various financial organizations. (Kannamani R., (2020).

Impact of Global scenario on Indian markets during pandemic

Creation of better working environment, improved customer centricity, business continuity plans to facilitate uninterrupted services, assessment of risks with respect to individual operation, reskilling of employees to facilitate their performance in the new normal and suggesting the banks to coordinate with the residential associations to enhance the retail offerings, expansion of the number of ATM's, facilitating of the critical response teams, increasing the number of nodal officers to facilitate handling of cases, facilitating the implementation of the strategies by partnering with the state and central governments being the various recommendations to increase the efficiency of the banking services. (Kannamani R., (2020). Studying the impact of the important announcements made by WHO and the Indian government related to Covid -19 on the price of stocks, it is evident that with the exception of the fertilizer and the services sector which witnessed the highest mean return followed by the financial sector witnessing the highest negative return followed by the pharmaceutical sector as explained in 2020 by Thomas, et al. Utilizing forecasting model of stock for long and short run and using the fluctuating factors, the impact of Covid -19 on the stock market is studied. A strong correlation between the pandemic and the resulting negative sentiments and its influence on the decision of investment which resulted in the negative reaction is witnessed in the short run and the possibility of the improvement of the market in the long run is opined for. (Gurav U. P., Kotrappa, S. (2020). Revising the existing literature, it is pretty much clear that Indian stock market in this current situation is very crucial to discuss with. But, according to different literatures, there are different methodologies that had been followed in different cases. As this current environment is not an expected shock in the economy, there are still testing and findings with the results that ultimately forecast the market with assurance.

Research and Methodology

The data on stock market were collected from Bombay Stock Exchange (BSE) daily from February 2020 to July 2020 to consider for econometric analysis. February 2nd to March 23rd data were on before covid situational analysis. March 23rd to July 9th were during lockdown phase data slot. Finally, July 10th to 31st July are the data covered for after lockdown scenario. The data are then fed into panel proforma to get it analyzed into Panel VAR model. The data are tested against their unit roots by applying Levin, Lin & Chu t, Im, Pesaran and Shin W-stat, ADF - Fisher Chi-square and PP - Fisher Chi-square. Once the unit root is determined, the data were then analyzed through Panel VAR and finally were tested against panel granger causality for short tun direction of causality. Finally, the return of the stock is calculated as

$$\text{Return} = (\text{Closing Price} - \text{Opening Price}) / \text{Closing Price}$$

In this juncture, our study is estimated by Panel VAR approach to include simultaneity in the variables. This method is not quite new, but the implementation of this technique in this current situation on the variables – return and seasonally adjusted trade is relatively not much discussed in the current literature. To measure Panel VAR, we incorporate the following equation as:

$$Y_{it} = Y_{it-1}A_1 + Y_{it-2}A_2 + \dots + Y_{it-p+1}A_{p-1} + Y_{it-p}A_p + X_{it}B + u_i + e_{it}$$

Where $i \in \{1, 2, \dots, N\}$, $t \in \{1, 2, \dots, T_i\}$,

Y_{it} is $(1 \times k)$ vector of dependent variables,

X_{it} is a $(1 \times l)$ vector of independent variables,

u_{it} and e_{it} are $(1 \times k)$ vector of dependent variable specific idiosyncratic errors, and

$(k \times k)$ matrices $A_1, A_2, \dots, A_{p-1}, A_p$ and $(l \times k)$ matrix B are parameters to be estimated.

In this juncture, our study is estimated by Panel VAR approach to include simultaneity in the variables. This method is not quite new, but the implementation of this technique in this current situation on the variables – return and seasonally adjusted trade is relatively not much discussed in the current literature.

Analysis

The three banks' data (Public, Private and Small Finance Banks), taken differently, were analyzed first for their unit roots. The description of the results is shown in Table 1 and Table 2.

Table 1: Result of Unit Root for Public, Private and Small Finance Banks; Variable- Return

Methods	Statistic			Probability		
	Public	Private	Small	Public	Private	Small
Levin, Lin & Chu t	(5.76869)*	(4.03856)*	(4.12946)*	0.00	0.00	0.00
Im, Pesaran and Shin W-stat	(10.9088)*	(12.5992)*	(1.18944)	0.00	0.00	0.1171
ADF - Fisher Chi-square	167.178*	238.794*	6.52411	0.00	0.00	0.1633
PP - Fisher Chi-square	737.136*	1157.79*	2.70791	0.00	0.00	0.6078

*Explains significance of the results at 5 percent

Table 2: Result of Unit Root for Public, Private and Small Finance Banks; Variable- Volume (seasonally adjusted)

Methods	Statistic			Probability		
	Public	Private	Small	Public	Private	Small
Levin, Lin & Chu t	(9.69004)*	(12.3684)*	(3.03409)*	0.0000	0.0000	0.0012
Im, Pesaran and Shin W-stat	(2.79435)*	(3.55105)*	(3.52504)*	0.0026	0.0002	0.0002
ADF - Fisher Chi-square	35.9326*	58.4944*	21.3483*	0.0309	0.0103	0.0003
PP - Fisher Chi-square	14.9487	24.2105	94.5902*	0.8644	0.9329	0.0000

*Explains significance of the results at 5 percent

Table 1 and 2 explain the unit root for the underlying variables return and seasonally adjusted volumes of the stocks. It proves that all the data are integrated of $I(0)$. This means that the data are stationary at their levels. The second step is to prove the Panel Vector Autoregression (VAR) among the variables. The results are shown in Table 3, Table 4 and Table 5.

Table 3: Result of Panel VAR Between Return and Seasonally Adjusted Volumes of Stocks for Public Banks

	Dependent Variable- Return			Dependent Variable- Volume_SA		
	Value	Std. Error	t statistic	Value	Std. Error	t statistic
Return (-1)	0.039442	0.02754	1.43208	5.591461	2.11.963	0.02638
Return (-2)	0.062482	0.02754	2.26908	(106.8718)	211.922	(0.50430)
Volume_sa (-1)	-2.95E-06	3.6E-06	(0.82817)	1.152237	0.02737	42.0945
Volume_sa (-2)	3.00E-06	3.6E-06	0.83623	(0.145096)	0.02760	(5.25618)
C	-0.002415	0.00113	(2.14361)	(10.33269)	8.67064	(1.19169)
R ²	0.007408			0.999949		
Adj. R ²	0.004388			0.999949		
SSR	1.801317			1.07E+08		
SEE	0.037011			284.8406		
F-Value	2.453395			6501886.		
Likelihood of Log Value	2480.934			-9331.041		
AIC	-3.751416			14.14552		
SIC	-3.731774			14.16516		
Value of Mean	-0.002071			18336.97		
Value of SD	0.037093			39998.17		

Table 3 explains the validity of the model. The model which considers return as an independent variable is statistically significant in influencing the volume of trade for public banks. The R square and adjusted R square is 99 percent that explain the validity of the independent variable to explain the exact scenario during this phase. It therefore rejects H_{01} to prove an association between volume of trade and return of stock in public sector banks.

Table 4: Result of Panel VAR Between Return and Seasonally Adjusted Volumes of Stocks for Private Banks

	Dependent variable- return			Dependent variable- volume_sa		
	Value	Std. Error	t statistic	Value	Std. Error	t statistic
Return (-1)	1.624694	0.01688	96.2515	9.06E-06	2.2E	0.41736
Return (-2)	(0.624699)	0.01688	(37.0086)	(9.04E-06)	2.2E-05	(0.41660)
Volume_sa (-1)	42.88956	16.7829	2.55556	0.091822	0.02158	4.25463
Volume_sa (-2)	11.65597	16.7580	0.69555	0.87439	0.02155	0.87439
C	7.733821	1.29328	5.97999	(0.002209)	0.00166	(1.32810)
R ²	0.999988			0.009102		
Adj. R ²	0.999988			0.007262		
SSR	3651530.			6.038209		
SEE	41.16364			0.052933		
F-Value	46401745			4.948606		
Likelihood of Log Value	-11092.32			3285.229		
AIC	10.27530			-3.037249		
SIC	10.28844			-3.024106		
Value of Mean	12003.30			-0.002040		
Value of SD	12069.44			0.053127		

Table 4 explains the validity of the model. The model which considers volume as an independent variable is statistically significant in influencing the return of the banking sector shares for public banks. The R square and adjusted R square is 99 percent that explain the validity of the independent variable to explain the exact scenario during this phase. It therefore rejects H_{01} to prove an association between volume of trade and return of stock in private sector banks.

Table 5: Result of Panel VAR Between Return and Seasonally Adjusted Volumes of Stocks for Small Finance Banks

	Return			Volume_sa		
	Value	Std. Error	t statistic	Value	Std. Error	t statistic
Return (-1)	0.297592	(0.06626)	4.49125	(1.352168)	5.14249	(0.26294)
Return (-2)	(0.002766)	(0.06574)	(0.04207)	2.396937	5.10235	0.46977
Volume_sa (-1)	0.000357	(0.00084)	0.42395	0.847031	0.06540	12.9510
Volume_sa (-2)	(0.000354)	0.00084	(0.41932)	0.155928	0.06558	2.37785
C	(.009325)	(0.00943)	(0.98833)	(0.361893)	0.73225	(0.49422)
R ²	.090937			0.999971		
Adj. R ²	.075463			0.999971		
SSR	.397651			2395.194		
SEE	.041136			3.192540		
F-Value	5.876950			2059245.		
Likelihood of Log Value	427.7930			(616.6149)		
AIC	(3.523275)			5.180124		
SIC	(3.450762)			5.252638		
Value of Mean	(0.002408)			2003.873		
Value of SD	0.042781			592.6901		

Table 5 explains the validity of the model. The model which considers return as an independent variable is statistically significant in influencing the volume of trade for public banks. The R square and adjusted R square is 99 percent that explain the validity of the independent variable to explain the exact scenario during this phase. It therefore rejects H_{01} to prove an association between volume of trade and return of stock in small finance sector banks.

Once panel VAR is completed, the next process is to check the optimal lag creation. The result of optimal lag selection is shown in table 6, 7 and 8.

Table 6: Result of Optimal Lag Selection of Public Banks

Value of Lag	L-Log	Test Statistic of LR	Error by Final Prediction	Criteria Based on Akaike	Criteria Based on Schwarz	Criteria Based on Hannan Quinn
0	-12763.75	NA	2384008.	20.36005	20.36824	20.36313
1	-6545.974	12405.80	118.3878	10.44972	10.47428	10.45895
2	-6532.944	25.95682	116.6949	10.43532	10.47626	10.45071
3	-6530.711	4.441426	117.0242	10.43813	10.49545	10.45968
4	-6506.606	47.86332	113.3314	10.40607	10.47977	10.43377
5	-6422.680	166.3797	99.76755	10.27860	10.36867	10.31245
6	-6055.873	726.0075	55.93583	9.699958	9.806406	9.739969
7	-6013.300	84.12753	52.59841	9.638438	9.761263	9.684605
8	-5980.911	63.90095*	50.27000*	9.593159*	9.732361*	9.645482*

* Indicates selection of lag error by different criterion

Table 7: Result of Optimal Lag Selection of Private Banks

Value of Lag	L-Log	Test Statistic of LR	Error by Final Prediction	Criteria Based on Akaike	Criteria Based on Schwarz	Criteria Based on Hannan Quinn
0	-19122.82	NA	426951.3	18.64018	18.64566	18.64219
1	-7970.226	22272.59	8.152667	7.774099	7.790551	7.780132
2	-7464.343	1009.300	4.998713	7.284935	7.312355	7.294990
3	-7332.536	262.7149	4.413254	7.160366	7.198754	7.174443
4	-7188.936	285.9396	3.851838	7.024304	7.073660	7.042403
5	-6981.051	413.5411	3.157663	6.825586	6.885910	6.847707
6	-6332.352	1289.180	1.684502	6.197224	6.268516	6.223367
7	-6285.667	92.68692	1.615860	6.155621	6.237880	6.185786
8	-6233.374	103.7182*	1.541566*	6.108552*	6.201780*	6.142739*

* Indicates selection of lag error by different criterion

Table 6 and 7 explain the optimal lag of the underlying variables in VAR is 8. The LaGrange criteria, Error by Final Prediction, Criteria Based on Akaike, Criteria Based on Schwarz and Criteria Based on Hannan Quinn indicate that the model chooses 8 period lags for their optimal calculation for public and private sector banks.

Table 8: Result of Optimal Lag Selection of Small Finance Banks

Value of Lag	L-Log	Test Statistic of LR	Error by Final Prediction	Criteria Based on Akaike	Criteria Based on Schwarz	Criteria Based on Hannan Quinn
0	-1387.501	NA	673.7450	12.18861	12.21869	12.20074
1	-185.3859	2372.596	0.018372	1.678824	1.769070	1.715235
2	-182.6212	5.408200	0.018572	1.689659	1.840069	1.750345
3	-174.2076	16.31056	0.017867	1.650944	1.861517	1.735904
4	-167.4606	12.96120	0.017443	1.626848	1.897586	1.736082
5	-165.0313	4.624341	0.017686	1.640625	1.971527	1.774134
6	-118.2484	88.23077	0.012153	1.265337	1.656403*	1.423120*
7	-111.5139	12.58300*	0.011867*	1.241350*	1.692579	1.423407
8	-108.3358	5.882278	0.011955	1.248559	1.759953	1.454891

* Indicates selection of lag error by different criterion

Table 8 explains the small finance banks consider 7 period lags as its optimal calculation for the underlying variables. After determining optimal lags, the model finds panel granger causality between the variables. The results of the panel granger causality are presented in Table 9, 10 and 11.

Table 9: Panel Granger causality for Public Banks

Null Hypothesis:	Obs	F-Statistic	Prob.
Seasonally adjusted volume does not granger cause stock return	1254	0.95488	0.4700
stock return does not granger cause Seasonally adjusted volume		1.82027*	0.0694

*Indicates that the result is significant at 10 percent level.

Table 10: Panel Granger causality for Private Banks

Null Hypothesis:	Obs	F-Statistic	Prob.
Seasonally adjusted volume does not granger cause stock return		0.10227	0.9028
stock return does not granger cause Seasonally adjusted volume	2160	3.70705*	0.0247

*Indicates that the result is significant at 10 percent level.

Table 11: Panel Granger causality for Small Finance Banks

Null Hypothesis:	Obs	F-Statistic	Prob.
Seasonally adjusted volume does not granger cause stock return	228	1.29909	0.2454
stock return does not granger cause Seasonally adjusted volume		1.08903	0.3720

Table 9 and 10 explain that stock market return for both public and private sector banks affect the volume of the shares. But, for small finance bank, the granger causality between the two does not exist. It therefore rejects H_{02} to prove that there exists granger causality from return to volume of trade in both public and private sector banks. The current study is unable to reject H_{03} and accept the fact that there is no granger causality from volume of trade to return of the stock in Indian stock market.

Conclusion

The article analyses the stock market performance in India during Corona Virus outbreak in year 2020. The outcome of the study confirms return in the Indian stock market influences volume of the stock predominantly in banking sector. The short run granger causality also signifies that there remains unidirectional causality from return to volume. The total number of trades in the market is a crucial factor in this situation as all the Indian investors are sensitive towards investing in market. The intraday trading may be successful in this current scenario rather than long run trading. As vaccination plays an important part towards the normalcy, the depiction of good performance in Indian stock market is in question. Also, as stock market carries the highest risk, it is also advisable to Indian investors to look into other different channels of investment to minimize the level of portfolio risk they are currently carrying. Finally, as the exchange rate fluctuation is a common consequence of the stock market upheavals, India can expect fall in the foreign investment in Indian market in near future. The recommendation of the study says, other things being constant, Indian policy makers need to focus on the short run strategies to strengthen the Indian financial market to take out India from its obvious financial and economic recession. To enhance the focus on NPAs also is a very big challenge for most public sector banks. Many banks have shortage of funds for long term planning and working capital and hence the Indian banking sector has to focus on strengthening its strategies by adopting cut cost-based decisions, be more productive on working issues, concentrate on, optimum asset utilization, loan deposit ratio, investment criteria, credit and interest rate risk diversification issues.

The turnaround strategies to combat the effects of the pandemic is characterized by the availability of the sustainable resources of the particular sector in consideration.

Author Contributions: Conceptualization, N.V., P.R.C., R.R.; Methodology, N.V., P.R.C., R.R.; Data Collection, N.V., P.R.C., R.R.; Formal Analysis, N.V., P.R.C., R.R.; Writing—Original Draft Preparation N.V., P.R.C., R.R.; Writing—Review And Editing, N.V., P.R.C., R.R.; All authors have read and agreed to the published the final version of the manuscript.

Institutional Review Board Statement: Ethical review and approval were waived for this study, due to that the research does not deal with vulnerable groups or sensitive issues.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

Conflicts of Interest: The authors declare no conflict of interest.

Abbreviations:

- i. AIC: Akaike information criterion
- ii. ANOVA- Analysis of Variance
- iii. ATM- Automated Teller Machine

- iv. BSE-Bombay Stock Exchange
- v. COVID 19- Novel Coronavirus 19
- vi. FDI- Foreign Direct Investment
- vii. FPE: Final prediction error
- viii. GARCH- General Autoregressive Conditional Heteroskedasticity
- ix. GDP- Gross Domestic Product
- x. HQ: Hannan-Quinn information criterion
- xi. Long Short-Term Memory (LBL –LSTM)
- xii. LR: sequential modified LR test statistic (each test at 5% level)
- xiii. NBFC- Non-Banking Financial Companies
- xiv. NPA- Non-Performing Assets
- xv. Panel VAR- Panel Vector Autoregression
- xvi. SC: Schwarz information criterion

References

- Asli D. K., Alvaro, P., & Claudia, R. O. (2020)., Banking Sector Performance During the COVID – 19 , Crisis, Policy Research Working Paper, 9363. <https://doi.org/10.1596/1813-9450-9363>
- Deepmala, J., Preeti ,S. (2020). Anticipation of Consequences and Sectoral Impact of COVID -19, An Indian Outlook, XV National Conference on Sustainable Management Practices & Economic Slowdown in India, 2020 <https://doi.org/10.2139/SSRN.3626278>.
- Dippi, V. & Praveen Kumar, S. (2020). Has COVID 19 Infected Indian Stock Market Volatility? Evidence From N.S.E., AAYAM,10, 25 -35.
- Gautam., A., Neha, Y., Kriti . S., Kritika ., G & Amisha. G. (2020). Exploring the Socio – Economic Impact of COID -19, A Case of India, PCI Report Series, New Delhi: Policy Change Initiative, 1 – 78.
- Geeta K., (2020). COVID – 19 Economic Impact in India, Journal of X'ian University of Architecture and Technology, XII, 614-628.
- Gurav U. P., Kotrappa, S. (2020)., Impact of COVID 19 On Stock Market Performance using Efficient and Predictive LBL – LSTM based Mathematical Model. *International Journal on Emerging Technologies*, 11(4): 108-115.
- Kannamani R., (2020). Impact Analysis in Banking, Insurance and Financial Services Industry Due to COVID – 19 Pandemic, *Pramana Research Journal*, 10, 19 – 29.
- Mohammed Noor. A., Mohammad Shabbir. A., & Kavitha C. (2020). Stock Market Response During COVID -19, Lock Down Period in India, *Journal of Asian Finance, Economics and Business*, 17, 131-137
- Thomas. T.C., Sankaraman, G. & Suresh, S. (2020). Impact Of COVID -19 Announcements on NIFTY Stocks, *Journal of Critical Reviews*, 7, 471-475.

Publisher's Note: SSBFNET stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

© 2021 by the authors. Licensee SSBFNET, Istanbul, Turkey. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

International Journal of Research in Business and Social Science (2147-4478) by SSBFNET is licensed under a Creative Commons Attribution 4.0 International License.