Sectorial Performance of National Stock Exchange: Pre and During Pandemic

N. Chandan Babu[1], Dr. K. Sreelatha Reddy[2], Vampu Anil Kumar[3]

[1]Assistant Professor in Department of Mathematics and Statistics- Bhavan's Vivekananda College of Science, Humanities and Commerce, Sainikpuri, Secunderabad, Telangana.

[2]Head, Department of Commerce, - Bhavan's Vivekananda College of Science, Humanities and Commerce, Sainikpuri, Secunderabad, Telangana.

[3]PG Master of Commerce, - Bhavan's Vivekananda College of Science, Humanities and Commerce, Sainikpuri, Secunderabad, Telangana.

Abstract : The NSE is the one of the largest trading markets which is started in early 19th century. The present study will analyze the performance of the Sectors which are listed in the NSE for pre and during pandemic.
Aim and Objectives: To test the significance difference between Returns of NSE Sectors of pre and during pandemic and also to study the effect of closing price of market on Manufacturing and Service Sectors for pre and during pandemic.
Methods: Paired t-test, Multiple Regression analysis.
Conclusion: - The study is concluded that there is high volatile in Service Sector compare to Manufacturing Sector during the pandemic.

Key words: NSE, Pandemic, Manufacturing Sector, Service Sector, volatile.

1.1 INTRODUCTION

National stock market is one of the top markets in the world. It was established in the year 1992. NSE is fully automated trading with high accuracy, reliability, speed etc. A large number of trading occurs every day. The growth of NSE has been increased tremendously with increasing number of investors. The trading in NSE is totally based on Demat account which is in dematerialized form i.e., no physical delivery. The companies which are listed in the NSE form certain groups based on the activities which they perform in the organization. The NSE comprises of 15 sectors that are broadly classified into Automobile, Banking, Consumer Durables, Fast Moving Consumable Goods, Financial Services, Health Care, Information Technology, Media, Metal, Oil and Gas, Pharmacy, Private Sector Undertakings, Private Banks, Realty and latest Financial Services 25/50. The sectors which are listed in NSE comprises of nearly 15 to 20 companies in each sector. The return and risk in the particular sector depend on the performance of the companies listed in the sector.
Due to lockdown announced by Honorable Prime Minister Shri. Narendra Modi all the industries and organization were completely shut. This has shown an adverse effect on the stock markets too. With the shutdown of the production, stock markets have also declined in the country. The investors were not ready to take the risk, as so many has lost their employment and their sources income. the investors may observe the performance of each sector and compare with others sectors which yield high returns with less risk to invest. As the returns of the sectors may completely depend on the market and performance of the industries which were shut, with no sources available the investor was not able trade in stock market. The buying, selling, imports and exports were completely shut for a period of 21 days. Covid is one of the most infectious disease which is spreading throughout the world. It is contagious and caused by SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus). The first case was identified in Wuhan, China in December 2019. It has spread throughout the world in a span of few months. The spreading of the virus has not only affected the living things but also non-living things. The 1st case was identified in India on 27th January 2020 in Kerala. Within a span of 3 months the cases were increased to 271.As of 31st March 2021, the number of active cases is 1,21,49,335.

2.1 RESEARCH METHODOLOGY

The secondary data is collected in pre and during pandemic from National Stock Exchange of the period 6th December, 2018 to 5th March, 2021 (560 trading days). All the 14 Sectors are been divided into two Sectors i.e., Manufacturing Sector (Automobile, Consumer durables, FMCG, Health care, Metal, Oil and Gas, Pharmacy) Service Sector (Banking,

Financial Services, Private banks, Media, Public Sector Undertakings, IT, Realty). **Methods:** Paired t-test & Multiple Regression analysis.

3 DATA ANALYSIS AND RESULTS

3.1. To test the significant differnce between Returns of NSE pre and during pandemenic Sectors of NSE by using t-test for paired samples using MS- Excel.

Table 1: shows the significant difference between Return of NSE Sector pre and during pandemic (Manufacturing Sector)

Manufacturing Sector	p- value	Result
Automobile	0.00456111	Significant
Consumables	0.00131887	Significant
Fast Moving Consumable Goods	0.00002931	Significant
Healthcare	0.00000000	Significant
Metal	0.00000000	Significant
Oil and Gas	0.51605146	No Significant
Pharmacy	0.00000000	Significant

Result: the table 1 shows that there is asignificant difference between pre and during pandemic in all Manufacturing Sectors(Automobile, Consumables, Fast Moving Consumable Goods, Health care, Metal, Pharmacy)expect the Oil and Gas Sector.

Table 2: shows the significant difference between Return of NSE Sector of pre and during pandemic (Service Sector)

Service Sectors	p- value	Result
Banking	0.000000000	Significant
Financial Services	0.000239184	Significant
Information Technology	0.000000000	Significant
Media	0.000000000	Significant
Private Banks	0.000000000	Significant
Public Sector Undertakings	0.000000000	Significant
Realty	0.000000048	Significant

Result: the table2 shows that there is asignificant difference between pre and during pandemic in all Service Sectors (Banking, Financial Services, Information Technology, Media, Private Banks, Public Sector Undertaking and Realty).

3.2. To study the effect of Market closing price on Manufacturing and Service Sectors of pre pandemenic using Multiple Regression through Eviews11.

Table 3: Market closing price on Manufacturing Sector Closing Price:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AUTO	-0.526310	0.039336	-13.37983	0.0000
CONSUMABLES	0.215703	0.025567	8.436826	0.0000
FMCG	0.066586	0.016647	3.999754	0.0001
HEALTH_CARE_INDEX	2.513265	0.176078	14.27356	0.0000
METAL	1.271426	0.084448	15.05572	0.0000
OIL_AND_GAS	0.839375	0.074470	11.27129	0.0000
PHARMA	-1.144725	0.080862	-14.15656	0.0000
R-squared	0.905935	Mean dependent var		11442.63
Adjusted R-squared	0.903868	S.D. dependent var		498.9421
S.E. of regression	154.6980	Akaike info criterion		12.94551
Sum squared resid	6533290.	Schwarz criterion		13.03638
Log likelihood	-1805.371	Hannan-Quinn criter.		12.98196
Durbin-Watson stat	0.221324			

Result: The result shows that there is more effect of Market Closing Price on Health Care Sector and Metal of Manufacturing Sector in pre pandemic.

Table 4: Market closing price on Service Sector Closing Price:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BANK	-0.263427	0.056780	-4.639407	0.0000
FINANCIAL_SERVICES	0.644670	0.049157	13.11461	0.0000
IT	0.135913	0.007187	18.91003	0.0000
MEDIA	0.575291	0.038121	15.09107	0.0000
PRIVATE_BANKS	0.529013	0.068933	7.674328	0.0000
PSU	-0.040067	0.045858	-0.873709	0.3830
REALTY	-3.681630	0.517436	-7.115142	0.0000
R-squared	0.977108	Mean dependent var		11442.63
Adjusted R-squared	0.976604	S.D. dependent var		498.9421
S.E. of regression	76.31627	Akaike info criterion		11.53233
Sum squared resid	1589999.	Schwarz criterion		11.62320
Log likelihood	-1607.526	Hannan-Quinn criter.		11.56878
Durbin-Watson stat	0.310815			

Result: The result shows that there is more effect of Market Closing Price on Financial Services and negative effect on Realty of Service Sector in pre pandemic.

3.3. To study the effect of Market Closing Price on Manufacturing and Service Sector of NSE during pandemenic using Multiple Regression by Eviews11.

Table 5: Market closing price on Manufacturing Sector Closing Price:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AUTO	0.625810	0.032441	19.29086	0.0000
CONSUMABLES	0.033413	0.011747	2.844411	0.0048
FMCG	0.113959	0.006097	18.69159	0.0000
HEALTH CARE INDEX	2.113496	0.209597	10.08362	0.0000
METAL	0.746660	0.074974	9.958942	0.0000
OIL_AND_GAS	-0.071292	0.039573	-1.801542	0.0727
PHARMA	-1.134255	0.111073	-10.21177	0.0000
R-squared	0.989476	Mean dependent var		11669.69
Adjusted R-squared	0.989245	S.D. dependent var		1875.228
S.E. of regression	194.4726	Akaike info criterion		13.40314
Sum squared resid	10324746	Schwarz criterion		13.49401
Log likelihood	-1869.440	Hannan-Quinn criter.		13.43959
Durbin-Watson stat	0.237976			

Result: The result shows that there is more effect of Market Closing Price on Health Care Sector and Metal Sector in Manufacturing Sector during pandemic.

Table 6 Market closing price on Service Sector Closing Price:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BANK	-0.255439	0.064666	-3.950121	0.0001
FS	1.481159	0.062969	23.52218	0.0000
IT	0.221016	0.007710	28.66527	0.0000
MEDIA	1.547237	0.117713	13.14410	0.0000
PRIVATE BANKS	-0.362938	0.098230	-3.694797	0.0003
PSU	1.345525	0.169584	7.934270	0.0000
REALTY	-14.67993	1.125301	-13.04533	0.0000
R-squared	0.991054	Mean dependent var		11669.69
Adjusted R-squared	0.990857	S.D. dependent var		1875.228
S.E. of regression	179.3035	Akaike info criterion		13.24072
Sum squared resid	8776882.	Schwarz criterion		13.33159
Log likelihood	-1846.701	Hannan-Quinn criter.		13.27717
Durbin-Watson stat	0.274134			

Result: The result shows that there is more effect of Market Closing Price on Media, FS and PSU Service Sector in during pandemic.

CONCULSION AND SUGGESTION

The Study reveals that for the Manufacturing Sector in pre and during pandemic period, there is no significant affect on Oil and Gas, remaining Sector are affected due to the pandemic i.e, Automobile, Consumbale, FMCG, Health care, Metal and Pharmacy Sectors. In pre and during pandemic period for the Service Sector, there is a significant affect on all the sectors. Risk has been increased and Return are decreased for all sectors due to pandemic. In Manufacturing Sector, there is high effect on Health care and Metal in the pre and during pandemic period and the least effect on other sectors. The Service Sectors in pre pandemic period, there is a high effect on Financial Service and the least effect on others sector and during pandemic period, there is high effect on Media, FS and PSU sectors. Investing in Health Care, Metal, Oil and Gas in Manufacturing Sectors and Financial Services, Banking, Media and IT from Services Sectors are benefited. The performance of the Service Sectors is high when compared to Manufacturing Sectors. This situation may not be for longer period of time; however, it might be settled in short period.

REFERENCE

1. NSE - National Stock Exchange of India Ltd: Live Share/Stock Market News & Updates, Quotes- Nseindia.com
2. NSE - National Stock Exchange of India Ltd. (nseindia.com)
3. Sectoral Indices - NSE India
4. NSE - Wikipedia
5. COVID-19 - Wikipedia
6. History & Milestones (nseindia.com)
7. article_8508_87f5a7f1f960217035eb44d61871a130.pdf (cibg.org.au)
8. (PDF) "The performance of the Indian stock market during COVID-19" (researchgate.net)
9. www.researchgate.net/publication/343339812_IMPACT_OF_COVID19_IN_INDIAN_STOCK_MARKET_WITH_FOCUS_ON_BANKING_SECTOR
10. Spillover of COVID-19: Impact on the Global Economy by Peterson K Ozili, Thankom Arun :: SSRN
11. JRFM | Free Full-Text | Volatility in International Stock Markets: An Empirical Study during COVID-19 (mdpi.com)
12. https://www.bing.com/search?q=world+covid+case&cvid=b749488ca53f486aaea2f85883e88db9&aqs=edge.0.0l4.8145j0j1&pgl
13. https://doi.org/10.1016/j.jfineco.2007.01.00
14. Economic impacts of Wuhan 2019-nCoV on China and the world (wiley.com)
15. Do COVID-19 and Crude Oil Prices Drive the US Economic Policy Uncertainty? by § Claudiu Albulescu :: SSRN
16. Salma Begum; Sampurna P.. "A Study on growth in Technology and Innovation across the globe in the Field of Education and Business". *International Research Journal on Advanced Science Hub*, 3, Special Issue 6S, 2021, 148-156. doi: 10.47392/irjash.2021.181