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Sectorial Impact Of Covid19 On Indian Capital Market Dr.Prakash Basanna Professor, Dept. of MBA, CMR Institute of Technology, Bengaluru Dr.Virupaksh Goud Associate Professor, Dept. of MBA, Acharya Institute of Technology, Bengaluru Chandan L Asst. Professor, Dept. of MBA, Cambridge Institute of Technology, Bengaluru Email: chandan.ly5@gmail.com Madhvi Mishra Asst. Professor, Global Academy of Technology, Bengaluru Email: maddy.mahek4@gmail.com

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Abstract

This paper attempts to examine the impact of COVID19 on various sectoral indices of Indian capital market and also to examine correlation between no. of deaths due to COVID19 and stock market behvaiour and correlation between no. of infections of COVID19 and stock market behvaiour. 11 sectoral indices have been chosen along with Nifty50. Average of the daily opening and closing prices are considered for calculating returns. The opening and closing prices of the indices chosen for the current study are collected from the nseindia website. The time frame of the current study is from 1st March 2020 to 31st June 2020.

The stock market behaviour during the post COVID19 was huge volatile. Only during the first one or two weeks the market was performing negatively but at later stage it recovered and reacted with wide fluctuations. The sector most affected by the COVID19 was banking sector particularly PSU banks, followed by realty, auto, media so on. The sectors least affected were IT and pharma sectors. Though stock market reacted negatively for some days, there is no perfect correlation between COVID19 and stock market movement. The reason for the negative movement of the market was not COVID19 alone, it was accompanied by other factors such as Yes bank crisis. Though stock market reacted negatively during post COVID19, it bounced back when the central govt. announced some relief packages.

Key Words: Capital market COVID19, Nifty50, Returns, Sectoral impact

INTRODUCTION

The covid19 is the first and foremost human disaster in 2020 which infected lakhs of people in more than 200 countries across the globe including India. It infected around 18354342 people and took the life of 696147 people across the globe as on 5th August 2020 (as per WHO report). On 31st December 2019, the World Health Organization (WHO) identified the first case of COVID-19 in Wuhan of China. The virus started to spread in China during mid-January 2020 and later turned into national crisis. Due to wide spread of the virus, the WHO declared global emergency on 30th January 2020 and declared the virus as pandemic on 11th March 2020. The COVID19 includes both Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). The Centre of Disease Control and Prevention (CDC) said that the COVID19 symptoms appear in human being within 2-14 days after a person exposed to the infected person. It is very difficult to diagnose during early stages. Though the fatality rate of COVID19 is very low compared to other viruses, such as Ebola, Zika, but infection rate is very high.

The pandemic made several countries inevitable to implement lockdown which in turn affected economy of the countries. The factories, hotels and restaurants, pubs, shopping malls, flights, educational institutions etc. were closed down during the lockdown period. Indian capital market witnessed a sharp volatility after outbreak of COVID19. It is very difficult to forecast about when the economy will be back on the track. The post COVID19 market crash was considered by some analysts as 'great depression' and 'Black Swan' of the 20th century. The BSE sensex which was 42273 points on 20th January 2020 touched to the lowest points of 25639 on 24/3/2020 falling by nearly 39% and Nifty50 declined to 7511 from 12430 points. The P/E ratio of sensex touched to the lowest of 17.81 on 31st March 2020 which was far less than the historical range of 20-24. Almost all the sectors of Indian capital market corrected sharply from their peaks.

LITERATURE REVIEW

Nippani and Washer [2004] conducted a study on the effect of SARS epidemic on capital market of Canada, China, Hong Kong, Indonesia, Singapore, Philippines, Vietnam and Thailand and found that the outbreak of SARS affected only on the stock markets of China and Vietnam. Wang, Yang and Chen [2013] studied impact of pandemic disease on various sectors of the capital market and concluded that biotechnology sector was severely impacted. Macciocchi et al., [2016] examined the impact of outbreak of Zika virus on capital market of Latin American and Caribbean Countries such as Brazil, Argentina and Mexico. The study revealed that the countries except Brazil did not show much negative returns. The market return was ranging from 0.90 percent to -4.87 percent and the average return was -0.90 percent. Del and Paltrinieri [2017] examined the impact of Ebola on capital market of African countries. He selected 78 mutual funds of African countries during 2006–2015

and concluded that Ebola and the Arab Spring seriously impacted on the fund flows, controlling the performance of the funds, spending, and returns of the market. **Ming-Hsiang Chen et.al [2018]** studied impact of SARS outbreak on the hotel stocks of Taiwan using an event study approach. The study revealed that the SARS outbreak adversely impacted on seven publicly traded Taiwanese hotel stocks. **Mei-ping Chenet et.al. [2018]** examined the impact of SARS outbreak on four Asian stock markets. The study revealed that the epidemic weakened China's long-term relationship with the four markets and also found the existence of a time-varying co-integration relationship in aggregate stock price indices.

OBJECTIVES

- 1. To examine the impact of COVID19 on various sectoral indices of Indian capital market
- 2. To examine correlation between no. of deaths due to COVID19 and stock market behaviour
- 3. To examine correlation between no. of infections of COVID19 and stock market behaviour

HYPOTHESES

 H_{01} There is no significant relationship between number of infections of COVID19 and stock market behvaiour

 H_{02} There is no significant relationship between number of deaths due to COVID19 and stock market behvaiour

RESEARCH METHODOOGY

11 sectoral indices have been chosen along with Nifty50. 1) Nifty Auto, 2) Nifty Financial services, 3) Nifty FMCG, 4) Nifty IT, 5) Nifty Media, 6) Nifty Metal, 7) Nifty Pharma, 8) Nifty Bank, 9) Nifty Pvt Bank, 10) Nifty PSU Bank, 11) Nifty Realty and 12) Nifty50. Average of the daily opening and closing prices are considered for calculating returns. The opening and closing prices of the indices chosen for the current study are collected from the nseindia.com website and COVID19 data is collected from worldometers.info website The time frame of the current study is from 1st March 2020 to 30th June 2020.

LIMITATIONS OF THE STUDY

The current study is confined to the impact of COVID19 only on selected sectors of Indian capital market. The composition of sectoral indices differ from NSE indices to BSE indices. The study is limited to only two months time frame of March and April though the COVID19 impact is spread even after April 2020.

RESUTS AND DISCUSSION

Weeks	No of	No. of						Retu	rns (%)					
	No. of Deaths	Infections	Nifty	Nifty	Pvt	PSU	Nifty	Nifty50						
	Deatils	milections	Auto	FS	FMCG	IT	Media	Metal	Pharma	Bank	Bank	Bank	Realty	Milly30
Week-1	0	37	-1.74	-4.56	-1.40	1.61	-7.07	-3.21	4.43	-5.39	-5.06	-7.29	-4.69	-2.60
Week-2	2	74	-13.72	-12.71	-12.30	-17.65	-21.03	-18.99	-13.53	-14.31	-14.70	-20.75	-18.58	-13.74
Week-3	5	282	-10.46	-15.99	-1.71	-8.99	-10.36	-7.78	-0.74	-16.86	-18.70	1.62	-13.11	-10.80
Week-4	20	628	-3.30	3.77	4.26	6.88	-3.12	-4.67	0.55	2.79	3.37	-6.10	-2.12	4.02
		Correlation												
[Between I	[Between Infections and sectors]		0.341	0.619	0.703	0.570	0.629	0.348	0.312	0.582	0.548	0.406	0.549	0.665
Correlation														
[Betwe	[Between deaths and sectors]			0.794	0.659	0.592	0.594	0.3	0.252	0.688	0.659	0.246	0.573	0.719

Table-1: Table showing No. of Deaths, Infections and Impact on Capital Market during March 2020

Source: nseindia.com COVID9 data: <u>https://www.worldometers.info/coronavirus/</u>

Table-2: Table showing No. of Deaths, Infections and Impact on Capital Market during April 2020

Weeks	No. of	No. of No. of						Retu	rns (%)					
	Deaths		Nifty	Nifty	Nifty	Nifty	Nifty	Nifty	Nifty	Nifty	Pvt	PSU	Nifty	Nifty50
	Deatils	Infections	Auto	FS	FMCG	IT	Media	Metal	Pharma	Bank	Bank	Bank	Realty	Mity50
Week-1	91	3265	-10.22	-12.25	2.31	-6.01	-6.78	-1.42	4.70	-13.23	-14.59	-7.82	-8.50	-6.64
Week-2	213	4916	16.20	9.67	9.51	7.12	9.43	8.98	20.61	10.63	11.70	2.69	6.80	9.72
Week-3	228	8410	4.98	2.47	1.66	0.02	4.08	8.18	5.87	4.26	5.01	2.52	2.13	2.85
Week-4	322	10275	-4.12	-3.80	-3.40	1.23	0.07	-9.16	1.57	-4.21	-4.73	-3.55	-4.36	-1.38
Week-5	510	14615	7.16	10.77	0.66	8.06	3.02	8.81	-0.12	9.46	10.73	4.24	3.43	6.91
Correlation														
[Between	[Between Infections and sectors]		0.183	0.508	-0.510	0.577	0.229	0.101	-0.615	0.436	0.461	0.501	0.260	0.366
	Correlation													
[Betwo	[Between deaths and sectors]			0.646	-0.326	0.736	0.345	0.195	-0.452	0.560	0.579	0.570	0.393	0.515
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Source: nseindia.com COVID9 data: https://www.worldometers.info/coronavirus/

MARCH 2020

In the 1st week of March 2020, the severity of COVID19 was more and affected most of the sectors of Indian capital market. Among all the sectors, the banking sector suffered huge losses, particularly PSU banks. The Nifty bank suffered a loss of 5.39% and the loss of Nifty PSU Bank was 7.29% followed by media (-7.07%), realty (-4.69%) so on. The reason for the market crash was not only outbreak of COVID19 but also Yes bank crisis. On 6th March 2020, Nifty50 crashed by 279.5 points (i.e. 2.48%) and Sensex by 894 points (i.e. 2.32%). Tata steel was the biggest loser on this day (i.e. -6.5%). The least affected sector was Nifty FMCG which was just - 1.40% as against benchmark index Nifty50 which was -2.60%.

The severity of COVID19 was continued in the second week of March 2020 also. In this week the severity was worser than that of the first week. The COVID19 pandemic wrecked havoc on global market on 12th March 2020, which in turn impacted on Indian capital market. The World Health Organisation (WHO) termed the COVID19 as a pandemic and expressed deep concern over the alarming levels of inaction. Many analysts predicted global recession and several countries across the globe started imposing travel restrictions. The Sensex tanked by 2019 points (i.e. -8.18%) and Nifty50 by 868 points (i.e. -8.30%) in a single day. SBI was top loser followed by ONGC, Axis bank, ITC, Titan, Bajaj Auto, TCS and Indusind bank. Besides global selloff in equities, massive plunge in international oil prices and depreciating rupee added to the volatility of Indian capital market. Bearish of the market was continued for the next day also and Nifty hit lower circuit for the first time since May 2009. The most affected sector in this week was Nifty media (-21.03%), followed by PSU bank (-20.75%), metal (-18.99%), realty (-18.58%). The least affected sector was again FMCG which was -12.30% as against benchmark index Nifty50 which was -13.74%.

Though third week of March witnessed adverse impact of COVID19 on Indian capital market, the severity was slightly lower than that of previous week of March. On 18th March 2020, the Sensex declined by 1707 points (i.e. 5.59%) and hit an intraday low of 28,613, slipping below the psychological level of 29000 for the first time since March 2017. Nifty50 lost nearly 500 points and touched day's lowest of 8407 points and closed at 8541 level. Nearly 28 stocks out of 30 sensex stocks ended in red and Indusind bank was a top loser, down by 24%, followed by Kotak Mahindra bank, Bajaj finance and power Grid. In this week also banking sector was badly affected; particularly private sector banks. The Nifty Pvt bank index suffered a loss of 18.70% followed by Nifty financial services (-15.99%), Nifty realty (13.11%) and so on. However PSU bank was least affected during this week which was 1.62% positive.

The scenario of fourth week of March was different from the first three weeks. Most of the sectors recovered during this week though some sectors had negative returns. The domestic market witnessed a sharp rebound on 20th March 2020 as positive global cues and coordinated efforts by countries across the globe to fight COVID19. The sensex gained 1628 points (i.e. 5.75%) and Nifty 482 points (5.83%). Out of 30 sensex constituents, 28 stocks advanced. All the

sectoral indices ended in the green and NiftyFMCG was the top gainer (9%) followed by NiftyIT (8.5%) and Niftymetal (7.7%). In this week, though benchmark index Nifty50 gained 4.02%, PSU banking sector was badly affected but private sector bank witnessed improvement with positive return. The Nifty PSU bank index suffered a loss of 6.10% followed by Nifty metal (-4.67%), Nifty auto (-3.30%) and so on. However, PSU IT made highest gain of 6.88% followed by FMCG (4.26%), financial services (3.77%) and Pvt Bank (3.37%).

However, the Indian capital market again crumbled on 23rd March 2020 after the country went into lockdown to contain the spread of COVID19. The BSE halted for 45 minutes as the sensex hit a lower circuit limit of 10% for the second time in a span of 10 days. The sensex tanked 3935 points (13%) with all 30 constituents ended in the red and Nifty down by 1135 points (13%) with session end of 7610. The India VIX increased by 6.64% to reach at 71.56 levels. Nifty private bank index plunged over 17% and Nifty bank 3299 points (16%) followed by Nifty Auto by 14%.

The central government was making constant efforts to tackle the economic fallout and business disruption due to lockdown of the country on account of COVID19. The central government announced Rs.1.7 lakh crore relief package to aid the country's economy. The sensex surged 1411 points (4.94%) and Nifty 324 points (3.89%) on 26th March 2020. All the sectors ended with green led by the Nifty bank. Indusind bank was the top gainer soaring over 45% and other major gainers were L&T, Bajaj Finance, Airtel, Bajaj Auto, Kotak bank and HUL.

In the month of March 2020, the correlation between no. of COVID infections and Nifty50 was just 0.665. The highest correlation was 0.703 in Nifty FMCG and lowest was 0.312 in Nifty pharma. Similarly, the correlation between no. of deaths due to COVID19 and Nifty50 was 0.719. The highest correlation was 0.794 in Nifty financial services and lowest was 0.246 in PSU bank. It shows that though there is a relation between COVID19 and stock market movement, it is not very high across all the sectors all the days. The Yes bank crisis bursted on 6th March 2020 which in turn affected entire banking sector.

APRIL 2020

In the 1st week of April 2020, the severity of COVID19 was again more and affected most of the sectors of Indian capital market. Among all the sectors, the banking sector suffered huge losses, particularly pvt banks. The Nifty pvt bank suffered a loss of 14.59% followed by financial services (-12.25%), auto (-10.22%) so on. The least affected sector was Nifty pharma which was 4.70% positive.

The scenario of 2^{nd} week of April was different from the previous week. The domestic market witnessed a sharp rebound and all the sectors recovered during this week. The benchmark

nifty50 was 9.72% and nifty pharma was top gainer with return of 20.16% followed by auto (16.20%), banking (10.63%) and so on.

The third week of April was also yielded a positive return. The benchmark nifty50 was 2.85% and nifty metal was top gainer with return of 8.18% followed by pharma (5.87%), pvt banking (5.01%) and so on. The NiftyIT was the lowest gainer in this week with return of just 0.02%.

The fourth week of April was again adversely affected. The benchmark nifty50 suffered loss of 1.38% and nifty metal was the highest loser with loss of 9.16% followed by pvt bank (-4.73%), nifty realty (-4.36%) and so on. However, during this week, Nifty pharma, IT and media yielded positive return and pharma was highest yielding sector with return of 1.57%.

During the fifth week of April, all the sectors except pharma yielded positive return. The benchmark nifty50 gained 6.91% and nifty financial services was the highest gainer with return of 10.77% followed by banking sector, nifty metal (8.81%) and so on. However, Nifty pharma suffered a loss of 0.12%.

In the month of April 2020, the correlation between no. of COVID infections and Nifty50 was as low as 0.366. The highest correlation was 0.577 in NiftyIT and lowest was -0.615 in Nifty pharma. Similarly, the correlation between no. of deaths due to COVID19 and Nifty50 was 0.515. The highest correlation was 0.736 in NiftyIT and lowest was -0.452 in Nifty pharma. It is inferred from the analysis that there is no correlation between COVID19 and stock market movement.

Weeks	No. of							Retu	rns (%)					
	Deaths		Nifty	Nifty	Nifty	Nifty	Nifty	Nifty	Nifty	Nifty	Pvt	PSU	Nifty	Nifty50
	Deatils		Auto	FS	FMCG	IT	Media	Metal	Pharma	Bank	Bank	Bank	Realty	Milly30
Week-1	821	24656	-4.32	-8.52	-7.38	-3.73	-5.01	-5.93	-1.20	-9.29	-8.51	-11.10	-8.18	-5.06
Week-2	813	28537	4.56	-3.12	0.71	-1.18	2.98	1.93	-1.87	-3.03	-3.19	0.80	2.07	-1.56
Week-3	999	42838	-0.71	-6.39	3.13	3.32	-0.87	-0.99	4.50	-8.38	-8.77	-8.81	-5.97	-1.13
Week-4	1384	52073	6.64	7.76	3.63	1.60	3.21	7.56	0.66	9.57	10.02	2.57	6.60	4.87
		Correlation												
[Between]	[Between Infections and sectors]		0.43	-0.61	0.532	-0.165	0.128	0.041	0.514	0.045	-0.020	-0.067	0.187	0.014
	Correlation													
[Betwe	[Between deaths and sectors]			-0.20	0.386	-0.290	0.09	0.037	0.317	0.111	0.051	-0.35	0.238	0.004

Table-3: Table showing No. of Deaths, Infections and Impact on Capital Market during May 2020

Source: nseindia.com COVID9 data: https://www.worldometers.info/coronavirus/

Table-4: Table showing No. of Deaths, Infections and Impact on Capital Market during June 2020

Weeks	No. of	No. of Infections						Retu	rns (%)					
	No. of Deaths		Nifty	Nifty	Nifty	Nifty	Nifty	Nifty	Nifty	Nifty	Pvt	PSU	Nifty	Nifty50
	Deatils		Auto	FS	FMCG	IT	Media	Metal	Pharma	Bank	Bank	Bank	Realty	Mity50
Week-1	1799	66877	7.47	8.40	2.87	5.06	15.54	9.00	5.18	8.41	7.59	19.08	12.82	6.36
Week-2	2313	75297	-4.28	-3.93	-3.11	-2.76	-7.51	-5.13	-2.82	-3.22	-2.00	-3.00	0.03	-3.56
Week-3	4080	86209	4.45	6.05	-0.001	1.76	9.32	4.62	5.22	1.79	4.82	7.52	4.00	4.28
Week-4	2719	113634	2.55	1.77	4.50	1.60	1.65	1.96	2.47	1.78	2.52	7.11	3.08	1.97
		Correlation												
[Between]	[Between Infections and sectors]		-0.08	-0.148	0.452	-0.024	-0.246	-0.157	-0.12	-0.221	-0.159	-0.220	-0.453	-0.045
	Correlation													
[Betwe	[Between deaths and sectors]			0.150	-0.170	-0.073	0.02	0.026	0.302	-0.265	0.011	-0.214	-0.408	0.117

Source: nseindia.com COVID9 data: https://www.worldometers.info/coronavirus/

MAY 2020

In the 1st week of May 2020, the whole market crumbled and all the sectors of the Indian capital market were under loss. Among all the sectors, the banking sector suffered huge losses, particularly PSU banks. The Nifty bank suffered a loss of 9.29% and the loss of Nifty PSU Bank was 11.10% followed by financial services (-8.52%), realty (-8.18%) so on. Nifty pharma was least affected which was just 1.20%.

In the 2^{nd} week of May, though entire market was negative, some of the sectors made gains. Nifty auto made highest return of 4.56% followed by media (2.98%), realty(2.07%), metal (1.93%), FMCG (0.71%). In this week pvt bank suffered huge losses which was 3.19% but NiftyPSU made positive return of 0.80%.

In the 3rd week of May, the senario was not different from the previous week. Most of the sectors suffered losses but some sectors recovered during this week. Nifty pharma made highest return of 4.50% followed by NiftyIT 3.32% and NiftyFMCG 3.13%. The banking sector was again worst affected with loss of 8.81% followed by Financial services 6.39%) and realty (5.97%).

The scenario of the Last week was quite different from the precious weeks where the entire market recovered significantly. The nifty50 gained 4.87% and banking sector was leading particularly pvt bank with highest return of 10.02% followed by Financial services (7.76%), metal (7.56%) and so on. It was only nifty pharma which made lowest return of just 0.66%.

In the month of May 2020, the correlation between no. of COVID infections and Nifty50 was as low as 0.014. The highest correlation was 0.532 in NiftyFMCG and lowest was -0.61 in NiftyFS. Similarly, the correlation between no. of deaths due to COVID19 and Nifty50 was 0.004. The highest correlation was 0.45 in Niftyauto and lowest was -0.35 in PSU bank. It is inferred from the analysis that there is no correlation between COVID19 and stock market movement.

JUNE 2020

In the 1st week of June 2020, all the sectors of the Indian capital market witnessed a significant gain with Nifty50 6.36%. NiftyPSU was top with gain of 19.08% followed by media (15.54%), realty (12.82%) so on. Nifty FGCG made least gain which was just 2.87%.

The market crumbled in the 2^{nd} week of June and all the sectors of the Indian capital market were under loss except realty. Among all the sectors, the nifty media was top loser with loss of 7.51% followed by metal (-5.13%), auto (4.28%) and so on. It was only nifty realty which made positive return of 0.03%.

The scenario of the third week was quite different from the precious week wherein the entire market recovered significantly except FMCG. The nifty50 gained 4.28% and nifty media was leading with return of 9.32% followed by PSU bank (7.52%), financial services (6.05%) and so on. It was only nifty FMCG which suffered loss that too just 0.001%.

The positive sign of the market continued in the fourth week of June also. Nifty50 gained 1.97% and PSU bank was top gainer with return of 7.11% followed by FMCG with return of 4.50%, realty with return of 3.08% and so on. Nifty IT made least return of 1.60%

In the month of June 2020, the correlation between no. of COVID infections and Nifty50 was negative 0.045. The highest correlation was 0.452 in NiftyFMCG and lowest was -0.453 in NiftyRealty. Similarly, the correlation between no. of deaths due to COVID19 and Nifty50 was 0.117. The highest correlation was 0.302 in Nifty pharma and lowest was -0.408 in NiftyRealty. It is inferred from the analysis that there is no correlation between COVID19 and stock market movement.

CONCUSION

The stock market behaviour during the post COVID19 was huge volatile. Only during the first one or two weeks the market was performing negatively but at later stage it recovered and reacted with wide fluctuations. The sector most affected by the COVID19 was banking sector particularly PSU banks, followed by realty, auto, media so on. The sectors least affected were IT and pharma sectors. Though stock market reacted negatively for some days, there is no perfect correlation between COVID19 and stock market movement. The reason for the negative movement of the market during the first two weeks was not COVID19 alone, it was accompanied by Yes bank crisis. Though stock market reacted negatively during post COVID19, it bounced back when the central govt. announced some relief packages.

SCOPE FOR FURTHER RESEARCH

Since the current study is confined to the impact of COVID19 on selected sectors of Indian capital market, it may be extended to other sectors such as small cap, large cap, middle cap etc. Since the current study is confined to time frame of only two months: March and April, it can be extended to after April 2020 also. The current study can be extended to different sectoral indices of BSE as the composition of the sectorial indices differ from NSE to BSE.

RESEARCH IMPLICATIONS

The current research helps the investors to understand the impact of deadly disease of COVID19 on the capital market.

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