

PERFORMANCE OF INFORMATION TECHNOLOGY SECTOR INDEX IN INDIA: PRE & POST COVID-19 LOCKDOWN

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ABSTRACT

The researchers analyzed the impact of COVID-19 on the performance of the Information Technology Index in India. The study examines the performance of IT Index before and after the COVID-19. So, for the study 30th December 2019 is been taken as event or pandemic day because the first COVID-19 case was recorded on 30th December 2019 by World Health Organisation (WHO). For the analyses purpose 400 days daily closing value of NIFTY IT Index spanning from 1st March 2019 to 15th October 2020 was utilized. The data collected timeframe was bifurcated as before and after COVID-19 from the point of event date. The result indicated that there was no significant difference between performance of IT Index before and after COVID-19.

Keywords: Information Technology Index, Event Study, Student t-Test, Sectoral Index.

Introduction

The most exclusive word chanted in a sarcastic way unanimously by all the people pan world is Corona Virus Disease-2019 or magnanimously christened as COVID-19. Things happening in and around us are beyond one's wildest dreams. It's like an enchantress occult engulfing the entire world. The entire world has turned red. The erratic death row of the people stretching transversely through six continents is being humming in the ears of many. Even the governments of so-called 'the super-powers' were running from pillar to post without knowing where the chequered flag is waving. The disease is being spread in an exponential manner in a jiffy. Despite religious persecution towards Apocalypse, the world leaders are concentrating on multitudinous factors to streamline the turbulent economy. "Are we living in the same world what we lived 4 months ago?" (or) "Does Mother Earth blindfolded her eyes?" (or) "This is what A.P.J. Abdul Kalam dreamt India being a superpower". These are one among the few questions, which arise in the minds of not only a moderator but also in a fanatic's mind.

The economic topsy-turvy has been set in motion by the alleged COVID-19, which has been the most repulsive word for the past four months. The stock bourses were in mayhem following the corona outbreak in Wuhan in December 2019. The equity market is always subject to both systematic and unsystematic risks. The yesteryear bear trend in the share market were triggered by economic or financial causes. Now, we have a market meltdown triggered by global pandemic. There is glocal savaging of market meltdown. This even provoked BSE and NSE by 25-30 percentage in the past few months. When WHO declared COVID-19 a pandemic, the financial markets and other asset categories (real estate, commodities, crude oil and bullion) became Black Swan, whose impact may be deeper and longer in the economy. Conventional wisdom in bourse is that whosoever swims against the tide emerges the winner. The blood shedding of the share market proves no one has the right to resist the rage of COVID-19. Nevertheless, as in the custom only the fittest survive during times of financial anarchy. Even during the subprime crises of 2008, the market crashed only in selected countries. Now, the entire world economy has come to a grinding halt due to the total shutdown of the entire world.

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As per the Indian IT & BPM Industry Report, IBEF (July, 2021), Information Technology companies in India are the major Knowledge Process Outsourcing Market across the global. The IT companies in India account for 55% of market share of the US global servicing sourcing business. According to STPI (Software Technology Park of India), the software exports increased from ₹. 4.66 lakh crore (US\$ 62.82 billion) in FY20 to ₹. 5 lakh crore (US\$ 67.40 billion) in FY21. The main reason for this 7% increase was Rapid Digitization and Work From Home (WFH) that helped to keep up the industry's growth amid coronavirus pandemic. With this quick adaptation to the dynamic environment, it was fit enough for us to analyze the performance of this sector before and after the COVID-19 impact.

Review of Literature

Mohammad Noor Alam, Md. Shabbir Alam, Kavita Chavali (2020) examined the influence of COVID-19 lockdown on the Indian Stock Market by selecting 31 companies listed on Bombay Stock Exchange (BSE). They analyzed whether the market reaction was same before and after lockdown period caused by COVID-19. The sample period taken for the study was 35 days (24 February-17 April 2020). The study revealed that during the lockdown period, the stock market reacted positively with significantly positive Average Abnormal Returns and investors anticipated the lockdown and reacted positively. However, before lockdown investors panicked and it was reflected in negative AAR.

Praveen Kumar & Manoj Kumara (2020) analyzed the correlation between performances of shares and growth of the share market for the pre and post COVID-19 status. The data was collected for a time between January 2020 and June 2020. The stock market has just reflected the investors attitude globally due to the pandemic. There was positively strong significance on market performance and value of its market capitalization.

Ramelli and Wagner (2020) identified that the firms that had exposures to China and USA had negative consequences and markets crumbled when the virus spread across Europe and USA.

Ozili and Arun (2020) analyzed the impact social distancing policies on the economic activities and stock market indices of the country. The study revealed that restriction on internal movement and higher fiscal policy spending had a positive impact on the level of economic activities, but increasing number of COVID-19 cases did not have a significant effect on the level of economic activities.

He, Liu, Wang, & Yu, (2020) explored the direct and spill-over effect of COVID-19 on stock markets in the China, France, Germany, Japan, Italy, South Korea, Spain and United States of America. The researchers found that COVID-19 pandemic had negative but short-term impact on stock markets of those countries and the impact of COVID-19 on stock markets has bidirectional spillover effects between Asian countries and European and American countries.

Liu, Manzoor, A., Wang, Zhang, & Manzoor, Z. (2020) evaluated the short-term impact of the COVID-19 outbreak on 21 leading stock market indices in Japan, Korea, Singapore, the USA, Germany, Italy, and United Kingdom. They found that stock markets in those countries fell quickly after the virus outbreak. Even Asian countries experienced more negative abnormal returns as compared to other countries.

Yan, Tu, Stuart, & Zhang (2020) identified that stock markets reacted adversely to pandemics in short-run but corrected themselves and improved in the long run. To make profit out of such a market they proposed industries that are immediately affected by the virus to be shortened in the short run and then eventually buying back into those industries after their prices have significantly dropped.

Objectives of the Study

- To understand the pattern / trend of Indian Information Technology (IT) Index before and after COVID-2019.
- To analyze the effect on performance of Indian Information Technology (IT) Index before and after COVID-2019.

Material Methods

The study is empirical in nature and based on secondary data of Information Technology Index was sourced from NSE (www.nseindia.com). For this study, the pandemic day/ event date was 30th December 2019 (World Health Organisation (WHO) first recorded COVID-19 case). For the analyses, the 400 days daily closing value of NIFTY IT Index spanning from 1st March 2019 to 15th October 2020 was utilized. The data collected timeframe was bifurcated as before and after COVID-19 from the point of event date. Before COVID-19, consist 200 days daily closing NIFTY IT index values from 1st March 2019 to 27th December 2019. After COVID, consist 200 daily closing NIFTY IT index values from 31st December

2019 to 15th October 2020. The pandemic day was eliminated or not been taken because it was been considered as event date or pandemic date. Line chart was in order to understand the pattern or movement of closing points of IT Index and also employed descriptive, correlation and t' test to know the difference between before and after the COVID-2019

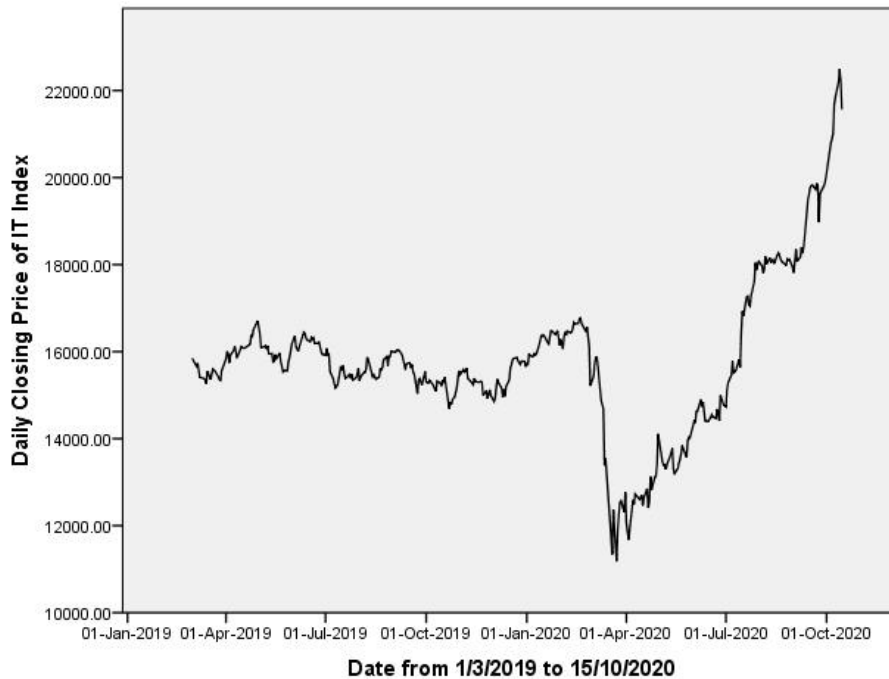
Hypothesis of the Study

H₀: There is no significant difference between the Indian IT Index before and after COVID-19

H₁: There is significant difference between the Indian IT Index before and after COVID-19

Analyses and Interpretation

Chart 1: Daily Closing Price of Information Technology (IT) Index



Sourced from nseindia.com

The above Chart 1 shows the direction of closing value in Information Technology (IT) Index from 1st March 2019 to 15th October 2020, which consist of 400 trading days in National Stock Exchange of India (NSE). Throughout the study period the highest recorded closing value (22492.6) was on the month of 13-Oct-20, the lowest (11179.6) was on the month of 23rd March 2020. The overall average for the study period was 15816.40 and the percentage of change in IT index closing value has increased from March 2019 to October 2020 was 36%.

The above Chart 2 shows the direction of closing value in Information Technology (IT) Index before COVID-19 from 1st March 2019 to 27th December 2019, which consist of 200 trading days in National Stock Exchange of India (NSE). Throughout the study period the highest recorded closing value (16705.4) was on the month of 30-Apr-19, the lowest (14688.65) was on the month of 22-Oct-19. The average of study period before COVID-19 was 15635.81 and the percentage of change in IT index closing price has decreased (-0.426%) from March 2019 to December 2019.

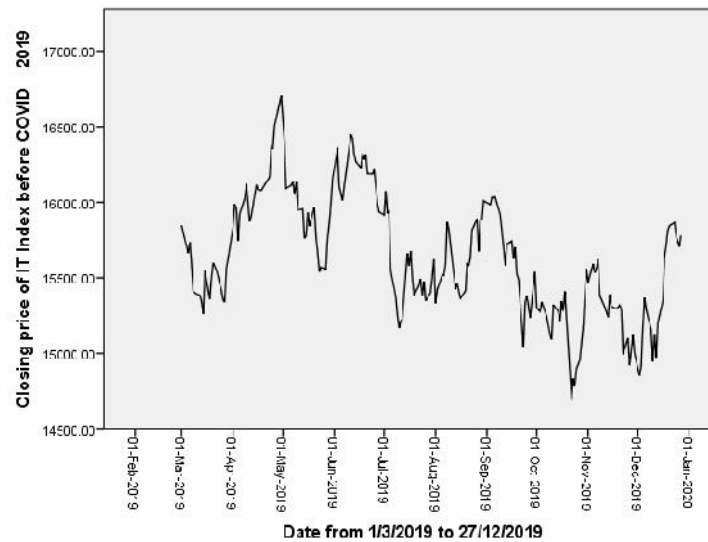
The above Chart 3 shows the direction of closing value in Information Technology (IT) Index after COVID-19 from 31st December 2019 to 15th October 2020, which consist of 200 trading days in National Stock Exchange of India (NSE). Throughout the study period the highest recorded closing value (22492.6) was on the month of 13-Oct-20, the lowest (11179.6) was on the month of 23rd March 2020. The average study period of after/post COVID-2019 was 15997.21 and the percentage of change in IT index closing price has increased (38%) from to December 2019 to October 2020.

Table 1 shows the frequency and descriptive statistics of daily closing value of Information Technology (IT) Index. The mean is measures of central tendency that approximates the center of the

data. The mean is 15816.40 for daily closing value of IT Index, closing value of IT Index before COVID-19 is 15635.80 and closing value of IT Index after COVID-19 is 15997.21. Standard deviation is the measures of dispersion, which tell us how the widely observed data are spread from the mean. For the easy understanding of data, the maximum value of observed data and minimum value of observed data of daily closing value of IT Index, before and after the COVID is given.

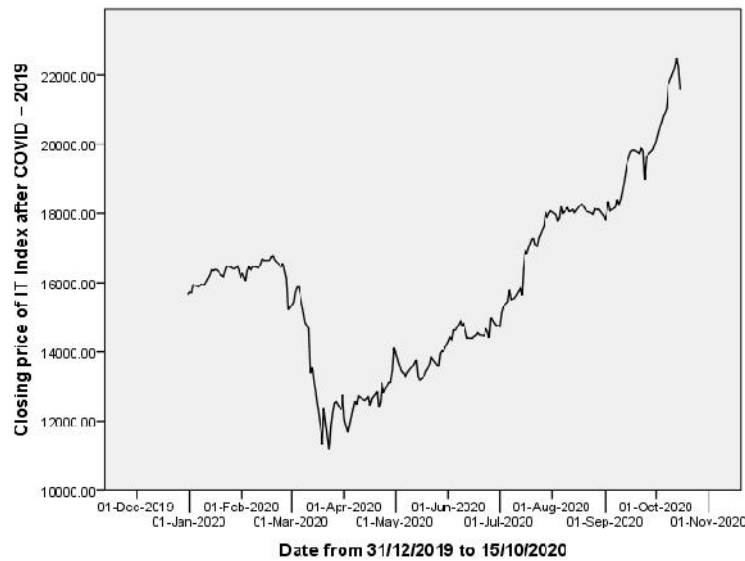
Table 2 deals with the descriptive of paired samples statistics and correlation of daily closing value of Information Technology (IT) Index before and after COVID-2019. The total number of observations was 200 and the mean value is more than daily closing value of IT Index after COVID-19 compared before COVID-2019. The standard deviation says the deviation from the mean value. In the paired samples correlation between the daily closing value of IT Index before and after COVID-19, the value is negatively correlated (-0.464) at 1% significant level. The negative correlation says that both the variable moves in opposite direction.

Chart 2: Closing Value of Information Technology (IT) Index before COVID-19



Sourced from nseindia.com

Chart 3: Closing Value of Information Technology (IT) Index after COVID-19



Sourced from nseindia.com

Table 1: Frequency and Descriptive Statistics of Daily Closing Value of IT Index

	N	Minimum	Maximum	Mean	Std. Deviation
Daily Closing Price of IT Index	401	11179.60	22492.60	15816.4032	1772.47974
Closing price of IT Index before COVID-19	200	14688.65	16705.40	15635.8053	396.78919
Closing price of IT Index after COVID-19	200	11179.60	22492.60	15997.2083	2468.16916
Valid N (list wise)	200				

Table 2: Paired Samples Statistics and Correlation for Closing value of IT Index

		Mean	N	Std. Deviation	Std. Error Mean	Correlation
Pair 1	Closing price of IT Index before COVID-19	15635.8052	200	396.78919	28.05723	-0.464*** (Sig. 0.000)
	Closing price of IT Index after COVID-19	15997.2082	200	2468.16916	174.52592	

Note: *** 1% Significance, **5% Significance and *10% Significance.

Table 3: Paired Sample t-Test for Closing Value of IT Index

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Closing value of IT Index before COVID-19 - Closing value of IT Index after COVID-19	-361.40300	2675.53699	189.18904	-734.47556	11.66956	-1.910	199	0.058

Note: *** 1% Significance, **5% Significance and *10% Significance.

Source: Data taken form NSE and computed by the authors.

Table 3 show the Paired Samples Test and its significance value for daily closing value of Information Technology (IT) Index before and after COVID-19. The t-value is 1.91 which is smaller than the student 't' distribution table's critical value is 2.345 (df is 199). The 95% of confidence interval between lower (-734.47556) and upper (11.66956) value are crossing the zero i.e., upper limit is in positive and lower limit is in negative. Therefore, they are not on the same side of zero. The null hypothesis of paired sample 't'-test is there is no significant difference between before and after COVID-19. For the observed data, the significance value is more than 1% level of significance (so, accept the null hypothesis). Hence, there is no significant difference between the daily closing value of IT Index before and after COVID-19.

Conclusion

The global economy has been jolted by the COVID-19 pandemic and India is not an exception to it. Being the second populous country, the effects of COVID-19 were expected to be more dangerous. The pandemic affected the stock markets pan world. The investor and investee were running errands as there was high volatility in the stock market performance. Unless a complete cure is found for the COVID-19, it would be hypothetical to see an economic recovery from the scars created by the pandemic across the world. When new normalcy is attained, the economy will revive, the stock market will start moving in a positive direction, and as witnessed in the past, recovery would be faster than expected.

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