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COVID-19: Impact on the Financial Services Sector Index

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Abstract

The COVID-19 has impacted the social as well as professional lives of people. This pandemic could be one of the most significant challenges faced by the financial services industry. Financial institutions around the world are closely monitoring and facing with the challenges of COVID-19 pandemic. Institutions are coming up with more expertise team to understand the immediate effect of this pandemic to business economies, society and other stakeholders to provide better services to the customers in this highly volatile business environment. Service sectors, including aviation, travel, and tourism, are likely to be hit the hardest. All eyes tuned to the financial services industry to see if they can respond in a manner that reduces the global economic impact of COVID-19. This pandemic has already had a serious impact on the global financial markets, including India, and it may have accounting and reporting implications for many entities. As Corona virus started to spread all over, and more information comes to light, the after effects are more severe than expected by the experts. This paper made an attempt to study the impact of covid-19 on the financial services sector index before and after Covid-19 pandemic.

Keyword: Coronavirus, Pandemic,Stock Market, Financial services sector, NSE, BSE

1. Introduction

The COVID-19 outbreak is an exact reminder that pandemic like other rarely occurring disasters have happened in the past and will continue to happen in the future. Around the globe, countries are in lockdown, and citizens are asked to maintain social distancing and stay at home [1]. This epidemic of COVID-19 affected the whole world and was felt throughout the industry. China, the second largest economy in the world, is stagnant. Planetary health organizations call the outbreak a national emergency. In India, we may have felt the supply chain disruption from China and the impact of China as a regional player. The

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impact of the pandemic on economic activity can be felt far beyond the aviation, transport, tourism and hospitality areas. Analysts see some contribution to the gross domestic product quarter from January to March 2020 [2].

This outbreak could significantly impact the global economy in the short run. These scenarios demonstrate the scale of costs that might be avoided by greater investment in public health systems in all economies but particularly in less developed economies where health care systems are less developed and population density is high [3]. Impacts of Corona Virus on Indian Economy state receipts from a much-delayed privatisation of India's second-biggest oil refiner, Bharat Petroleum Corp, could be lower by at least $2 billion against initial estimates. The company's share prices have fallen by over 27 percent since January while the broader NSE Nifty 50 index has fallen by nearly 20 percent following a panic in global markets [4].

The Spillover of COVID-19: impact on the Global Economy. They drew on real-world observations in assessing the restrictive measures, monetary policy measures, fiscal policy measures and the public health measures that were adopted during the period. The study empirically examines the impact of social distancing policies on economic activities and stock market indices. The findings revealed that the increasing number of lockdown days, monetary policy decisions and international travel restrictions severely affected the level of economic activities and the closing, opening, lowest and highest stock price of major stock market indices [5]. Financial markets in India are witnessing sharp volatility currently as a result of the fallout in global markets. The fall is in line with the global benchmark indices as the domestic market usually tracks the major global indices and the high volatility is likely to continue in the near future. Further, with overseas investors flying to the safety of dollar-backed assets from emerging markets has led to a sharp downfall in the Indian Stock Market [6].

1.1 Worldwide Banking System and Influence of Covid-19

The COVID-19 pandemic has impacted nearly every aspect of life around globally. Decreased productivity and lockdowns have already started to take a toll on the financials of the corporate sector. Supply chain disruptions, manufacturing hindrances and crippled health systems need a hefty public fund and stimulus to continue operations smoothly. Income from tourism, entertainment sectors among many others has already crippled the economic situation. We have already seen humongous losses in the financial markets of up to Rs 59.87 trillion due to this pandemic. Investor sentiments are at an all time low and it is also becoming evident how difficult it is going to be for banks all over the world to maintain good

assets and good earnings. Due to the shutdowns and income slowdown, many repayments of loans, especially in Europe, United States, may cease leaving the banks dry [7]. That were earlier their assets now would become a big risk.

United States and Europe can already be seen as the emerging epicenter after China started to recover from this economic shock. Italy, the world's second best health services country, is in a socio-economic disaster since Corona virus hit the country. The situation has continued to escalate even after total lockdowns and borders being completely shut down. The Fitch ratings agency already warned of Italian banking system coping mechanism with COVID-19. Then countries that were already sliding into recession like Greece increase investors worry more. People have put large portfolios in United States or Europe and are now in a fix because of the pandemic emptying their pockets as financial markets crash all over the world.

Bank shares have been seeing a sharp decline showing the shaking confidence in the global financial system. Supply chain disruptions, manufacturing hindrances and crippled health systems need a hefty public fund and stimulus to continue operations smoothly [8]. Income from tourism, entertainment sectors among many others have already crippled the economic situation. Factors like these are all adding up to strain the global economy which might also have its repercussions in the year ahead. The best of India’s companies and banks are in a spot as the pandemic related lockdown brings business to a halt. In an economy ravaged by pay-cuts and lay-offs, experts expect financiers both for consumer and corporate loans to see delayed repayments and probably even defaults.

Central banks around the world, meanwhile, have proactively intervened to calm markets and show commitment for using all possible measures. In its first emergency move since the recession in 2008, the US Federal Reserve (the Fed) recently cut the federal funds rate by 50 basis points. The Fed has also actively intervened in the repo market to add further liquidity. The Bank of Japan (BoJ), meanwhile, issued an emergency statement signaling that it would inject liquidity into the market by increasing asset purchases. The People’s Bank of China (PBOC) has also pumped more than US$ 240 billion of liquidity into the financial system as a counter measure to the virus. Additionally, the Bank of England and the European Central Bank (ECB) have announced various plans to [9] counter COVID-19 in the coming days. Meanwhile, banking and capital markets firms around the world are mobilizing and taking steps to minimize COVID19’s effects on day-to-day operations. We do not know the long-term implications of COVID-19 for financial markets and banking and capital markets firms. COVID-19 may further accelerate migration to digital channels and connectivity. We now

assume a more gradual recovery in numerous countries, with continued downside risk to this base-case scenario. We acknowledge a high degree of uncertainty about the rate of spread and peak of the corona virus pandemic [10].

2. Objectives of the Study

- To examine the stationarity of financial service sector during before and after COVID-19.
- To analyze the volatility index price of financial services sector during pre and post COVID-19.
- To measure the influence of COVID-19 in the price movements of financial services industry.

3. Hypothesis:

- H_0: The Index price return of financial services sector is not volatile.
- H_0: The COVID-19 does not influence the index price returns of financial services sector.

4. Methodology of the study

This study is of both descriptive and analytical in nature and discusses the positive and negative impact of COVID-19 on financial services sector.

Sources of data	Period of data
NSE Website	January 2019 to December 2020
Articles	
Newspaper	

5. Data analysis and interpretation

The data collected are analyzed through respective statistical tools like Relative Strength Index (RSI), Augmented Dickey Fuller Test (ADF) and GARCH (1,1) Model.

5.1 Measuring the speed and changes of price Movements by using Relative Strength Index (RSI):

The relative strength index (RSI) is a momentum indicator used in technical analysis that measures the magnitude of recent price changes to evaluate overbought or oversold conditions in the price of a stock or other asset. The RSI is displayed as an oscillator (a line graph that moves between two extremes) and can have a reading from 0 to 100. The indicator was originally developed by J. Welles Wilder Jr. and introduced in his seminal 1978 book,

"New Concepts in Technical Trading Systems."

The formula for RSI is

$$RSI = 100 – (100/1+RS)$$

RS = Average gain per day/ Average loss per day

The change can be calculated by the difference between current price and previous price. Then the upward can be calculated by the increasing in the change, the downward can be calculated by the decreasing in the change. Then the average upward and average downward can be calculated by average upward price before 14 days and average downward price before 14 days for each and every day respectively.

Table No.1: Average Value of RSI in Pre – COVID19 in Financial Service Sector

Average Value	Upward	Downward	Average UP	Average Down	Relative strength	RSI
	105.0844697	98.35803571	103.1338914	92.62549953	1.282392719	52.83520911

Source: Collected from www.nseindia.Comand computed

According to Wilder RSI normalized function, the values range from 0 to 100, with a value greater than 70 indicating an overbought condition and a value lower than 30 indicating an oversold condition. From Table 1, it can be clearly observed that Pre – COVID-19 period the RSI value was average (52.83520911) i.e., average performance of share, this value indicates the shares are neither overbought or oversold due to average performance of the company Share during pre – COVID-19.

Table No. 2: Average Value of RSI in Post – COVID19 in Financial Service Sector

Average Value	Upward	Downward	Average UP	Average Down	Relative strength	RSI
	175.66	218.2138182	175.8501499	210.4084219	0.938449489	47.27154366

Source: Collected from www.nseindia.Comand computed

It appears from the Table 2 that there is an average performance (47.27154366) of shares, this value indicates the shares are neither overbought or oversold due to average performance of the shares of the company during post COVID-19. The data analysis shows that there is

significant impact of COVID-19 which is found in financial services index stock price during the study period.

5.2 Measuring stationarity of stock price during the pre-COVID-19 period by using Augmented Dickey Fuller Test (ADF):

The Augmented Dickey Fuller Test (ADF) is unit root test for stationarity. Unit roots can cause unpredictable results in time series analysis. The ADF test can be used with serial correlation.

Table No. 3: ADF of Pre – COVID19 in Financial Service Sector

Unit Root Test for Financial Service Index		**t-Statistic**	**Probability**
Augmented Dickey-Fuller test statistic		-13.967225	0.0000
Test critical values:	**1% level**	-3.555023	
	5% level	-2.915522	
	10% level	-2.595565	

Source: Collected from www.nseindia.Comand computed using E – Views 7

The Table 3 represents that the results of ADF test financial services sector index for the Pre-COVID-19. The t-statistics value (-13.967225) is lesser than the critical value at all the level of significance in the price returns of financial service sector index. Hence it can be interpreted that the financial service sector index price of pre COVID-19 period has been obtained stationarity in the level itself. Further the P value represents the rejection of hypothesis.

Table No. 4: ADF of Post – COVID19 in Financial Service Sector

Unit Root Test for Financial Service Index		**t-Statistic**	**Prob.***
Augmented Dickey-Fuller test statistic		-16.16702	0.0000
Test critical values:	**1% level**	-3.565430	
	5% level	-2.919952	
	10% level	-2.597905	

Source: Collected from www.nseindia.Comand computed using E – Views 7

The Table 4 implies the stationarity of financial services sector index. The result of

ADF indicates that the index price of the financial services sector index has been obtained stationarity at all levels. T-Statistics value (-3.817418) is lesser than critical value in all the levels. The P value confirms that there is the rejection of null hypothesis.

5.3 Measuring volatility of stock price during the pre-COVID-19 period by using Generalized Autoregressive Conditional Heteroskedasticity (GARCH):

The GARCH (1, 1) is the simplest and the most robust of the family of volatility models. However, the model can be extended and modified in many ways. To examine the volatility level prevailing in the stock market, GARCH (1, 1) model has generated different values for different parameters.

Table No. 5: GARCH (1, 1) Model of Pre – COVID19 in Financial Services Sector

Mean Equation			
Variable	**Co-efficient**	**Std. Error**	**Z-Statistics**
C	0.000258	0.001327	0.194107
Variance Equation			
C	2.47E-06	3.19E-06	0.773180
RESID(-1)^2	-0.093096	0.034764	-2.677918
GARCH(-1)	1.063651	0.054736	19.61330

Source: Collected from www.nseindia.Comand computed using E – Views 7

The above Table 5 examines the results of the mean and variance equations of GARCH Model for the financial services sector index daily returns from January 2019 to December 2019. It is found from the analysis that the selected sample index has obtained high volatility of 0.970555 (-0.093096 +1.063651) during the study period. That is 97 percent of volatility exist in the selected sample index during the study period. Hence the hypothesis “The Index price returns of sample indices are not volatile” is rejected.

Table No. 6: GARCH (1, 1) Model of Post – COVID19 in Financial Services Sector

Mean Equation			
Variable	**Co-Efficient**	**Std. Error**	**Z-Statistics**
C	-0.003263	0.002036	-1.602627
Variance equation			
C	-1.78E-05	1.26E-05	-1.410556
RESID(-1)^2	-0.059646	0.095723	-0.519685
GARCH(-1)	1.106235	0.119600	10.09389

Source: Collected from www.nseindia.Comand computed using E – Views 7

The result (Table 6) implies that the index price returns of financial services sector index after the COVID – 19 obtained significant volatility of 1.046589 (-0.059646 + 1.106235) during the study period. That is 105 percent of volatility exist in the selected sample index during the study period. Hence the hypothesis "The Index price returns of sample indices are not volatile" is rejected and confirmed that there is significant volatility existed in financial services sector during the study period.

6. Conclusion

The main aim and purpose of the study is to analyze the impact of COVID - 19 on stock market especially in financial services sector of National Stock Exchange. Result from the GARCH (1,1) and RSI help to determine the impact of COVID – 19 and higher amount of equities been undersold exhibits significant impact in the financial services sector index in India. Comparing the return of the financial services sector index has been recorded low return. Hence with the results of all the analysis it can be understood that the COVID-19 in India made an adverse impact in financial services sector during the study period. The sudden fall of stock values affect the financial service process and it has been influenced the stock market for a period and it is recovering soon with optimum potential.

7. Competing Interests

The authors have no conflicts of interest to declare. All co-authors have seen and agree with the contents of the manuscript and there is no financial interest to report.

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