

# Impact of Lockdown Announcement on Stock Prices of Banking Sector: An Event Study of Indian Stock Market

**Simran Shrimali**

Symbiosis School of Economics  
Symbiosis International (Deemed University),  
Pune

**Dr. Devendra Shrimali**

Assistant Professor, Dept. of Business  
Administration Mohanlal Sukhadia  
University, Udaipur, Rajasthan

## **Abstract**

COVID 19 has changed global financial architecture to a large extent and Indian banking is no exception to it. The structural changes due to COVID 19 are unprecedented. The Indian banking sector has been a major hit due to outbreak of COVID 19 and further nationwide lockdown announcements. The present study has used event study as methodology to study the impact of lockdown announcement on bank nifty. The study found that stock prices of Indian banking sector have been adversely affected by the pandemic and subsequent lockdown announcements.

**Key Words** Indian Banking, COVID 19, Lockdown, Banking Structure

---

## **Introduction**

The “COVID-19 pandemic is distinctive and unprecedented in many aspects and has tested health care systems” to its maximum. 212 countries around the globe have been affected by this pandemic and many countries are facing second wave of COVID-19 (Cyranski, 2020). The Indian economy wasn't in great condition even before the COVID-19 outbreak, which has only made matters worse. It is to be believed that banks may be more risk-averse to restructuring loans this time around, having already suffered big losses in previous restructuring efforts. Infact, some of the rating agencies such as Standard & Poor's are predicting recovery in Indian banking system only after year 2023. Over the last six months, the benchmark Sensex and Nifty regained most of the losses they had taken in February and March. But one key sector — banking — continues to trail significantly at the stock markets.

**Table 1: Performance of Various Indices during COVID 19 Period**

BSE INDICES	31 JAN 2020	21 OCT 2020	CHANGE (%)
Sensex	40,723	40,707	-0
Bankex	35,289	27,969	-20.7
Finance	6,846	5,575	-18.6
Power	1,899	1,638	-13.7
Telecom	1,178	1,042	-11.5
Metal	9,494	8,534	-10.1
Consumer durables	26,147	24,505	-6.3
FMCG	11,641	11,001	-5.5
Auto	18,161	17,813	-1.9
Teck	7,911	9,982	26.2
IT	15,871	21,943	38.3
Healthcare	13,957	19,748	41.5

Source: Singh S, (2020), retrieved from <https://indianexpress.com/article/explained/should-you-invest-in-bank-stocks-sensex-nifty-6843671/>

The two big underperformers are the bank index and finance index, down respectively by 21% and 19% from their January 31 levels. Besides, metal, power and telecom indices too are down between 10% and 15%.

#### Literature Review

“Alam, Alam & Chavali, (2020) studied the response of the Indian stock market to the COVID-19 pre and post lockdown period using the market model and found out the existence of positive abnormal return during the lockdown period as investors already predicted the lockdown situation but there was a negative abnormal return before lockdown as the investors were in panic mode. But overall lockdown had a positive impact on the Indian Stock Market.

Baker et al. (2020) investigated the US stock market reaction by comparing COVID-19 to other virus influenzas such as Bird Flu (H5N1), SARS, Swine Flu (H1N1) and Ebola and found out that no other diseases made a substantial impact on US market volatility than the COVID-19.

Sun et al. (2020) used an event study approach to study the impact of the Covid-19 on the Chinese stock market and its response across different industries. It found out that the event negatively impacted the Shanghai Stock Exchange and had a positive impact on the Shenzhen Stock Exchange. The pandemic had a severe negative impact on transportation, mining, real estate, health, agriculture, construction, environment electric and heating and education but it has a strong positive impact on IT, public management and sports & entertainment.

Heyden & Heyden (2020) investigated the impact of COVID-19 on the stock prices of the US and Europe on a cross country level. The stock market had no significant reaction to the first virus case but reacted negatively to the first death. The market reaction was also different for the announcement of the monetary and fiscal policies. The markets reacted negatively to the fiscal policies and monetary policies measures have helped to pacify the markets.

Pandey & Kumari, (2020) studies the impact of the

COVID-19 on the 49 stock market indices of the emerging and developed economies by conducting an event study using market model found out that developed markets have been hit hard in the longer window period but in the shorter period, the impact is not substantial. The Asian markets have been considerably affected by the pandemic. Overall, the pandemic had a negative impact on the global stock markets.

Sun et al, (2020) analysed the impact of the COVID-19 on the Chinese stock market by using event study and panel regression found out that the pandemic had an overall negative impact on the stock prices post-event window and the impact was also varied across different industries. Out of 37 industries only seven industries related to the Internet, medical manufacturing, education and agricultural production had a positive impact.

Gupta, Goyal & Sardan, (2018) studied the impact of the announcement of Indian government of recapitalisation by infusing 2.11 lakh crores in the banks to shore up their capital and meet the requirements found out that it had a positive impact on the stock prices of the selected five banks and the event window gave an opportunity to make cumulative abnormal returns of 5.7%.

Ricci (2015) analyses the impact of the monetary policy announcements on the European bank stock prices during the financial crisis conducting an event study by calculating abnormal return followed by a regression analysis concluded that banks are more sensitive to the non-conventional measures than to the interest rate decisions but the banks with a weak balance sheet and high operating risk were more sensitive to the monetary policy interventions.

Miyajima & Yafeh (2007) studied the impact of major events of the Japanese banking crisis from 1995 to 2000 on major non-financial companies by calculating the abnormal rate of return found out that all the sectors were not impacted equally. Sectors such as transportation equipment, electronics performed better than real estate, textile and construction. The crisis impacted companies, which had limited credit access, heavy debt, low market to book ratios and lower credit rating.

Chen, Jang & Kim (2007) investigated the impact of the 2003 SARS outbreak on Taiwanese hotel stock prices using an event study approach and concluded that the outbreak had a significant negative impact on the performance of the stocks by generating negative returns.”

### The objective of the Study

The objective of the study is to examine the impact of the COVID-19 on the Indian banking sector and how resilient is the banking sector to shocks.

### Research Methodology

#### Research Model

“The event study is an empirical analysis that examines the impact of an event. The paper studies the impact of the COVID-19 on the banking industry through the event study method. There are three major models for calculating the abnormal returns: the market index adjusted return rate model, the average adjusted return rate model and the market model. The market model is the most frequent method to study the impact of an event”.

In this paper the market model we have used which is as follows:

The calculation of the normal rate of return:

$$R_{i,t} = \alpha_i + \beta_i R_{i,M,t} \quad (1)$$

“The  $R_{i,t}$  is the actual return of the security  $i$  during the time  $t$ .  $R_{i,M,t}$  is the market rate of return of the trading market.  $\alpha_i$  and  $\beta_i$  are the regression coefficients of the market rate of return and daily return of the stock  $i$ .

The calculation of the average abnormal rate of return:

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{i,M,t}) \tag{2}$$

It shows the abnormal return on a definite day within the event window. It represents the difference between the actual stock return  $R_{i,t}$  on that day and the normal return and is predicted based on the relationship between the stock prices of the firm and its reference index which is expressed in parameters  $\alpha_i$  and  $\beta_i$  and the reference is the market's rate of return  $R_{i,M,t}$ .

The calculation of the cumulative abnormal rate of return:

$$CAR_{i(t_1,t_2)} = \sum_{t_1}^{t_2} AR_{i,t} \tag{3}$$

$CAR_{i(t_1,t_2)}$  is the cumulative abnormal return rate of stock in the event window  $(t_1,t_2)$  is calculated to measure the total impact of an event over a specific period.

The study has used T-test to observe the abnormal rate of return during the window period.

In addition to this, a regression analysis was performed between the Market (Nifty 50) and Nifty Bank Index to examine whether the market return significantly predicted returns in Bank Nifty”.

**Event Window**

“On 24th March 2020, the Prime Minister of India Narendra Modi announced a first nation-wide lockdown for 21 days. This step was taken preventive measure to curb the spread of the COVID-19. It restricted the movement of the 1.3 billion people creating a huge panic among the

people.

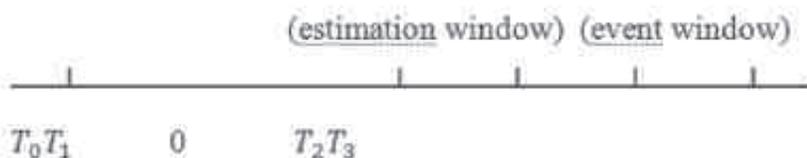
To determine whether there are any excess or abnormal returns earned by the stockholders, the event window is defined by combining three window periods. The event window is divided into three fragments:

Estimation Window: The 40 days before the announcement of the lockdown.

Event window: The day of the announcement of the lockdown.

Effective days post-event window: The 40 days after the announcement of the lockdown”.

“Figure 1: The  $T_0$  and  $T_1$  section is the estimation window,  $T_1$  and  $T_2$  section is the event window and  $T_2$  and  $T_3$  section is post-event window”.



### Sample Selection

“The data analysed in the paper is collected from the website of the National Stock Exchange (NSE). The sample consists of the Nifty Bank Index and the Nifty 50 Index. The Nifty Bank Index comprises of India's most liquid and large capitalised banking stocks. The index consists of 12 stocks from the banking sector. It offers the investors with a benchmark that depicts the performance of Indian banking stocks. The Nifty Bank Index was selected to analyse the overall performance of the banking sector”.

The Nifty 50 Index consists of the blue-chip companies which are the most liquid and largest capitalised Indian stocks. It includes 50 stocks out of 1600 listed stocks on the National Stock Exchange and captures the 65% of its floating market capitalization. It gives a true reflection of the Indian equity market.

### Data Analysis

**Table1: “Results of Impact of COVID-19 shock on Bank Nifty”**

Event Window	Abnormal Return	t Value	Significance
(-40,0)	0.00103	0.216	Not Significant
(-35, 0)	0.01361	2.8355	Significant
(-30,0)	0.00494	1.03	Not Significant
(-25,0)	-0.00561	-1.1692	Not Significant
(-20,0)	0.00801	1.6696	Not Significant
(-15,0)	0.0108	2.2508	Significant
(-10,0)	-0.0053	-1.104	Not Significant
(-5,0)	0.01028	2.142	Significant
(0,0)	-0.01478	-3.0792	
(0,+5)	-0.00697	-1.4595	Not Significant
(0,+10)	1.29633	0.0027	Not Significant
(0,+15)	0.02778	5.7865	Significant
(0,+20)	-0.01316	-2.7426	Significant
(0,+25)	-0.01511	-3.1482	Significant
(0,+30)	-0.01927	-4.0149	Significant
(0,+35)	-0.0269	-5.6036	Significant
(0,+40)	0.01079	2.2477	Significant

“The impact of COVID-19 pandemic on the market value of the Indian banking sector can be seen in table 1”. It can be seen that, on the day of very next day of announcement of lockdown by Government of India, the bank NIFTY declined although not significantly. It can also be seen that the value of bank nifty kept on declining significantly after 15 days of lockdown announcement. However the bank nifty increased during 10 days of lockdown announcement. It can be seen from the above table that, bank nifty significantly declined during (0, +20) window period by the abnormal return of -0.01316. The t statistics during (0,

+20) window period was -2.7426 indicating a significant impact on bank nifty. Likewise, during 0,+ 25 window period abnormal return was -0.01511 with at statistics of -3.1482 indicating a significant negative impact of lockdown announcement on bank nifty. The impact worsened in 0.+30 and 0, + 35 days window period where the abnormal return was -0.01927 and -0.0269 respectively. The t statistics also indicated a significant negative impact of COVID 19 outbreak on banking stocks as a whole.

**Table 2: Regression analysis between Market and Bank Nifty**

Regression Model Summary			
R	R <sup>2</sup>	Beta	The standard error of the estimate
0.90	0.819	1.425	0.1090
ANOVA			
Model	df	F	p-value
Regression	171	773.84	3.57

A linear regression analysis was performed to examine whether the market return significantly predicted returns in bank nifty. “The regression model indicated that the predictors explained 0.90 of the variance and a collective significant effect was found”. The beta coefficient was 1.425 which indicated that bank nifty is positively influenced by the market movements. The bank nifty has been vulnerable due to market movements in these turbulent times. The R2 of 0.819 explains that around 81.9% of the variance in the bank nifty is explained by market returns. Hence it can be concluded that after the lockdown announcement market has influenced banking stocks to a large extent.

#### Conclusion

The massive spread of COVID-19 has led to a noteworthy fall in major indices, demonstrating its impact and potential to radically affect GDP growth. While the overall impact of COVID-19 on credit growth is expected to be negative across most sectors, the degree and nature of the impact on the Indian banking sector is horrible. The Indian banking stocks have seen never before a decline in the recent past.

Although banking stocks appeared to be positive movers in the first place but later, they were falling like anything. As per the analysis, it was found that after 15 days of the lockdown banking stocks were declining significantly. Before and after lockdown comparison reveal the fact that Indian banking stocks were mostly in increasing mode before lockdown with some major returns but after lockdown, the banking stocks were falling all over the place. Post lockdown market sensitivity of 1.42 also indicates that banking stocks were highly influenced by market movements. Hence it can be concluded that COVID-19 has negatively impacted the Indian banking sector and the impact will be felt for a long time.

#### References

- Alam, M., Alam, M., &Chavali, K. (2020). Stock Market Response during COVID-19 Lockdown Period in India: An Event Study. *The Journal Of Asian Finance, Economics And Business*, 7(7), 131-137. doi: 10.13106/jafeb.2020.vol7.no7.131
- Baker, S., Bloom, N., Davis, S., Kost, K., Sammon, M.,

- &Viratyosin, T. (2020). The Unprecedented Stock Market Reaction to COVID-19. *The Review Of Asset Pricing Studies*, 10(4), 742-758. doi: 10.1093/rapstu/raaa008
- Chen, M., Jang, S., & Kim, W. (2007). The impact of the SARS outbreak on Taiwanese hotel stock performance: An event-study approach. *International Journal Of Hospitality Management*, 26(1), 200-212. doi: 10.1016/j.ijhm.2005.11.004
- Cyranoski D. "We need to be alert": scientists fear second coronavirus wave as China's lockdowns ease. *Nature* 2020 [Epub ahead of print]; DOI: 10.1038/d41586-020-00938-0 Crossref, Google Scholar
- Gupta, P., Goyal, A., & Sardana, S. (2018). An Event Study on Abnormal Returns in Banking Sectors. *MERI-Journal Of Management & IT*, 11(2), 39. doi: 10.25089//meri/2018/v11/i2/173962
- He, P., Sun, Y., Zhang, Y., & Li, T. (2020). COVID-19's Impact on Stock Prices Across Different Sectors—An Event Study Based on the Chinese Stock Market. *Emerging Markets Finance And Trade*, 56(10), 2198-2212. doi: 10.1080/1540496x.2020.1785865
- Heyden, K., & Heyden, T. (2020). Market Reactions to the Arrival and Containment of COVID-19: An Event Study. *SSRN Electronic Journal*. doi: 10.2139/ssrn.3587497
- Miyajima, H., & Yafeh, Y. (2007). Japan's banking crisis: An event-study perspective. *Journal Of Banking & Finance*, 31(9), 2866-2885. doi: 10.1016/j.jbankfin.2007.03.006
- Pandey, D., & Kumari, V. (2020). Event study on the reaction of the developed and emerging stock markets to the 2019-nCoV outbreak. *International Review Of Economics & Finance*, 71, 467-483. doi: 10.1016/j.iref.2020.09.014
- Ricci, O. (2015). The impact of monetary policy announcements on the stock price of large European banks during the financial crisis. *Journal Of Banking & Finance*, 52, 245-255. doi: 10.1016/j.jbankfin.2014.07.001
- Sun, Y., Wu, M., Zeng, X., & Peng, Z. (2020). The impact of COVID-19 on the Chinese stock market: Sentimental or substantial?. *Finance Research Letters*, 101838. doi: 10.1016/j.frl.2020.101838