



# FLUCTUATION IN FINANCIAL MARKET OF INDIA AND CHINA: A COMPARATIVE STUDY

<sup>1</sup>Mohit Goswami

<sup>1</sup>Junior Research Fellow

<sup>1</sup>University College of Commerce and Management Studies

<sup>1</sup>Mohanlal Shukhadia University, Udaipur (Raj.)

## ABSTRACT:

The Corona Virus, which originated from Wuhan, China, is a severe shock even compared to the Great Financial Crisis in 2007–08. However, the impact of the COVID - 19 on the financial markets of India and China has never been researched on a comparative basis. The present study is undertaken to investigate the impact of the COVID - 19 on the Financial Markets of India and China in the peak time of pandemic i.e., from January 2020 to July 2020. The research paper majorly focused on the Shanghai stock market of China and the Bombay Stock Exchange of India. The study was mainly based on secondary sources of data collected from various websites and articles. For the purpose of the study, the data of every 10th day has been collected from January 2020 to July 2020. The study reveals that there was a significant impact of COVID – 19 on the financial market of India whereas there is the insignificant impact of COVID – 19 on the financial market of China on basis of correlation results.

**Key Words:** Financial Market, Capital Market, Stock Exchanges, Pandemic, Share Market, Impact, Global Economy.

## 1. INTRODUCTION

The COVID 19 (Corona Virus Disease 2019) originated in Wuhan, China and The World Health Organization (WHO) on March 11, 2020, has declared the Novel Corona Virus outbreak a global pandemic. It has quickly spread over all the continents affecting most countries (nearly 206 countries) in the world. COVID – 19 is behaving in different countries at some striking differences. In Italy and U.S.A because of highly social interactions and COVID – 19 mortality is still high. In contrast, Japan had some of the earlier cases, but the mortality is low despite not having adopted some the more restrictive social isolation measurements but in India, which is the second largest country in world as per population where mortality rate can be high but because of some restrictive social isolation measurements like Country lockdown is highly appreciated. These puzzling differences have been adjudicated to different cultural norms, medical care standards as well as because of Political leadership.

UNDP has made a call to action to the international community to think beyond the immediate impact of COVID-19. The organization has emphasized the need for three priority actions: resources to help stop the spread of the virus, support to respond during the outbreak itself, and resources to prevent the economic collapse of developing countries.

The growing COVID-19 crisis threatens to disproportionately hit developing countries, not only as a health crisis in the short term but as a devastating social and economic crisis, Low GDP Growth rate as well as falling off in Global Stock market and according to United Nation, world will soon face the period of recession. Global Stock market majorly consists of US Market, European Union Market as well as Asian Market.

Stock market indexes around the world are powerful indicators for global and country-specific economies.

### **Asian Stock Market**

Asia is a biggest continent of world. The regions of Asia are divided into developed and developing economies. The highly developed countries include Japan and the four countries often referred to as the Asian Tigers - Hong Kong, Singapore, South Korea and Taiwan. Major players among the other powerhouses include Russia, China, India and Malaysia. There are many stock exchanges in Asian region.

India has 9 stock exchanges like BSE, NSE etc. out of which Bombay stock exchange also known as SENSEX (Sensitivity INDEX)

#### **Bombay Stock Exchange:**

Asia's oldest stock exchange which was established in 1875 with a total market capitalization of \$ 2.2 Trillion as on April 2018, Now BSE is the 10<sup>th</sup> largest stock exchange of world. Under the Security control act BSE became the first stock exchange to be recognized by the Indian Government. In September, 2012 BSE had joined United Nations Sustainable Stock Exchange initiative as a partner exchange. On 30 December 2016 BSE established India INX. India INX is the first international exchange of India.

China may refer to the two main stock exchanges which are Shanghai stock exchange and Shenzhen Stock exchange.

#### **Shanghai Stock Exchange:**

The Shanghai Stock Exchange is the world's 4th largest stock market by market capitalization at US\$4.0 trillion as of November 2018 whereas Shenzhen Stock exchange is the 8th largest stock exchange in the world, and 4th largest in East Asia and Asia.

In 1891 foreign businessmen founded the "Shanghai Share brokers Association" headquartered in Shanghai as China's first stock exchange. The current exchange was re-established in 1990 which is directly administered by the China Securities Regulatory Commission (CSRC)

## **2. Material and Method**

The particular study has exploratory research design because of contemporary topic whereas the study is based on empirical research type.

The study is based on secondary data which had been collected from various sources which are as follows:

1. Research Journals
2. Government website of Various Countries
3. Official website of Various stock exchanges

## Sample Design and Sample Size

The particular study is based on sample selected on the basis of Non-Random Judgmental technique. The particular study is undertaken to investigate the impact of COVID19 epidemic on Share market of India and China, for the purpose of study two stock exchange have been selected from India and China which are Bombay stock exchange and Shanghai stock exchange respectively on the basis of maximum market value

In Asia, where COVID – 19 have maximum effects, which are as follows:

Continent	Country	Stock Exchange	COVID – 19 Patient (Till 1 <sup>st</sup> July, 2020)	Source
Asia	China	Shanghai stock exchange	83,534	Ministry of Foreign Affairs of the People's Republic of China
	India	Bombay stock exchange (SENSEX)	6,05,221	Ministry of Health and Family Welfare

## Objective of Study:

1. To evaluate the correlation of COVID 19 pandemic on Financial Market of India and China.
2. To study the significant difference between financial market of India and China during pandemic peak time.

## Hypothesis:

**H<sub>0</sub>(1):** There is no relation between number of COVID19 Patient and Market value of Bombay stock exchange of India.

**H<sub>0</sub>(2):** There is no relation between number of COVID19 Patient and Market value of Shanghai stock exchange of China.

**H<sub>0</sub>(3):** There is no significant difference between market value of Indian and China during pandemic peak time.

## 3. Results and Discussion:

The present study is based on descriptive and analytical techniques to identified the impact of COVID19 epidemic on Stock market of India and China from 1<sup>st</sup> January, 2020 to 1<sup>st</sup> July, 2020.

For the purpose of study spearman correlation test have been applied to identified correlation between COVID19 confirmed cases and Market value of selected stock exchanges.

## Correlation Results:

Table 1 shows the increment in no. of COVID19 patient of India from 1<sup>st</sup> of January, 2020 to 1<sup>st</sup> of July, 2020. On 30<sup>th</sup> January, 2020 first COVID19 patient had found in State of Kerala. Till the end of February, 2020, India has only 3 patients but within 10 days i.e., on 11<sup>th</sup> of March COVID19 patient increased to 70 which was 2233.33% jump in confirmed cases. Government of India had started taken multiple measures to control CORONA virus, the step was to partial lockdown in states of India thereafter It was ordered after a 14-hour voluntary public curfew on 22<sup>nd</sup> March, 2020. Next step was taken by Government of India to lockdown entire country for 21 days i.e., from 25<sup>th</sup> of March to 15<sup>th</sup> of April but on 14<sup>th</sup> April, Prime minister Narendra Modi

extended the nationwide lockdown until 3 May, with a conditional relaxation after 20 April for the regions where the spread had been contained or was minimal.

On 1 May, the Government of India extended the nationwide lockdown further by two weeks until 17 May. The Government divided all the districts into three zones based on the spread of the virus—green, red and orange—with relaxations applied accordingly.

India is facing continuous increment in COVID19 cases even when entire country is under lockdown just because of careless citizen and regional events without permission. Till 1<sup>st</sup> July, 2020 confirmed cases now increased to 6,05,221 cases. India has third highest COVID cases in world following to USA and Russia.

Table 1 also provides market value 1<sup>st</sup> January, 2020 to 1<sup>st</sup> July, 2020 of Bombay stock exchange which is one of the stock exchanges in India. From 1<sup>st</sup> January to 1<sup>st</sup> February there was decrement of 1571 points in market value which there was only 1 case of COVID19 but within a period of 2 months i.e., from 1<sup>st</sup> February to 1<sup>st</sup> April, India had faced 205800% jump in COVID19 cases, simultaneously there was continuous decrement in market value of Bombay Stock Exchange which was about 11470 points i.e. 28.86%. But after 1<sup>st</sup> April there is slightly decrement in rate of COVID 19, India market had start pumping up.

Table 2 shows the Correlation between number of COVID19 Patient and Bombay stock exchange of India. As per Spearman correlation there is negative correlation between number of COVID19 Patient and Bombay Stock Market with the  $-0.754$  Value and significant value is 0.000 which is less than p Value 0.01 which is strong evidence to reject null hypothesis which is “There is no relation between number of COVID19 Patient and Market value of Bombay stock exchange of India.

Table 3 shows the increment in no. of COVID19 patient of India from 1<sup>st</sup> of January, 2020 to 1<sup>st</sup> of July, 2020. In the month of November last year, first COVID19 patient had found in Wuhan, China. Till the end of December, 2019, China has only 1 patient but within 10 days i.e., on 11<sup>th</sup> of January, COVID19 patient increased to 41 which was 4100% jump in confirmed cases.

Government of China had taken various measures to COVID19 like the government also made clear that testing for the new virus was free, and COVID-19-related charges that weren't covered by a person's insurance would be paid for by the government.

China had faced continuous increment in COVID19 cases in the initial period of time. Till 1<sup>st</sup> July, 2020 confirmed cases now increased to 83,534 cases. China was the originator of Corona Virus but now China is not even in top 10 highest no. of COVID 19 patient Country.

Table 3 also provides market value 1<sup>st</sup> January, 2020 to 1<sup>st</sup> July, 2020 of Shanghai stock exchange which is one of the stock exchanges in China. From 1<sup>st</sup> January to 1<sup>st</sup> February there was decrement of 303.51 points in market value when there was 14380 case of COVID19 but within a period of 2 months i.e., from 1<sup>st</sup> February to 1<sup>st</sup> April, China had faced 467.37% jump in COVID19 cases, simultaneously there was continuous decrement in market value of Bombay Stock Exchange which was about 12.09 points i.e., 0.44%. But after 1<sup>st</sup> April there is slightly decrement in rate of COVID 19, China market had start pumping up.

Table 4 shows the Correlation between number of COVID19 Patient and Shanghai stock exchange of India. As per Spearman correlation there is negative correlation between number of COVID19 Patient and Shanghai Stock Market with the  $-0.178$  Value and significant value is 0.394 which is more than p Value 0.01 which is strong evidence to accept null hypothesis which is “There is no relation between number of COVID19 Patient and Market value of Shanghai stock exchange of China.

Figure 1 is showing about percentage change in stock market of India and China major stock exchange as a result of increase in number of COVID19 cases. As COVID19 is declared as an epidemic by World health

Organization all nations where COVID19 is spreading had decided to country lockdown which is directly impacting working of all the Industries which lead to fluctuation in Stock Market.

At the extend till countries were not facing COVID19 problem there were minor fluctuations in stock exchanges but after starting COVID19 problem the countries are supposed to lockdown all the type of Industries which results in heavy downfall in stock market.

All the countries are facing decline in market value but in the above four samples, India had faced maximum decrement in Bombay stock exchange which was around 11470 points within 2 months i.e., from 1 February, 2020 to 1 April, 2020.

As per the figure 1 in the month of January, China had faced nearly 10% decline in their Shanghai stock exchange because increasing rate of COVID19 -patient was high where as in India, there was a minor fluctuation in the month of January in Bombay stock exchanges because country was no cases but as cases increases country to take major decision to control COVID19. Indian government need to lockdown entire country which had direct impact on stock market. From February to April, India had faced high rate of increment in COVID19 cases in the result for the same Bombay Stock Exchange was decline by 34% points whereas Shanghai Stock Market of China faced only 0.44% points decline in market value. As rate of increment COVID19 cases is declining, the central as well as state governments of India stated proving freedom in market which directly have a positive impact on Stock Market.

## T - test Result:

Table 5 showing results of t – test to evaluate the existence of significant difference between market value of India and China capital market. T – test result shows that t – statistic was – 31.10 and p – Value was 0.000 at 5% level of significance which is a strong evidence to reject null hypothesis i.e., There is no significant difference between market value of Indian and China during pandemic peak time. As per the result, there is significant difference between market value of India and China stock exchanges during the peak time of COVID 19 pandemic.

## 4. Conclusion:

Corona virus disease 2019 (COVID19) as originated in Wuhan city of China which was declared as an epidemic on 11<sup>th</sup> March, 2020 by World Health Organization. It has quickly spread over all the continents affecting most countries (nearly 206 countries) in the world. Till now there is no vaccination for COVID19 patients but it can be control by social distancing and for the strike implementation of social distancing many countries are locking down their entire country for taking control over COVID19 but it will directly be affecting major industries which is lead to fall in world stock market. The particular study had focused on impact of COVID19 cases on stock market of India and China. As per the Spearman's correlation there is negative correlation between COVID19 cases and market value of stock exchange.

In India from 11<sup>th</sup> February to 1<sup>st</sup> April, 2020 total add to in COVID19 cases were 2,056 parallel there was decrease in value of European Union stock exchange market which was 12950.83 points i.e., 31.42%. In China from 11<sup>th</sup> January to 1<sup>st</sup> April, 2020 total add to in COVID19 cases were 81,562 parallel there was decrease in value of shanghai stock exchange market which was 315.60 points i.e., 10.34%.

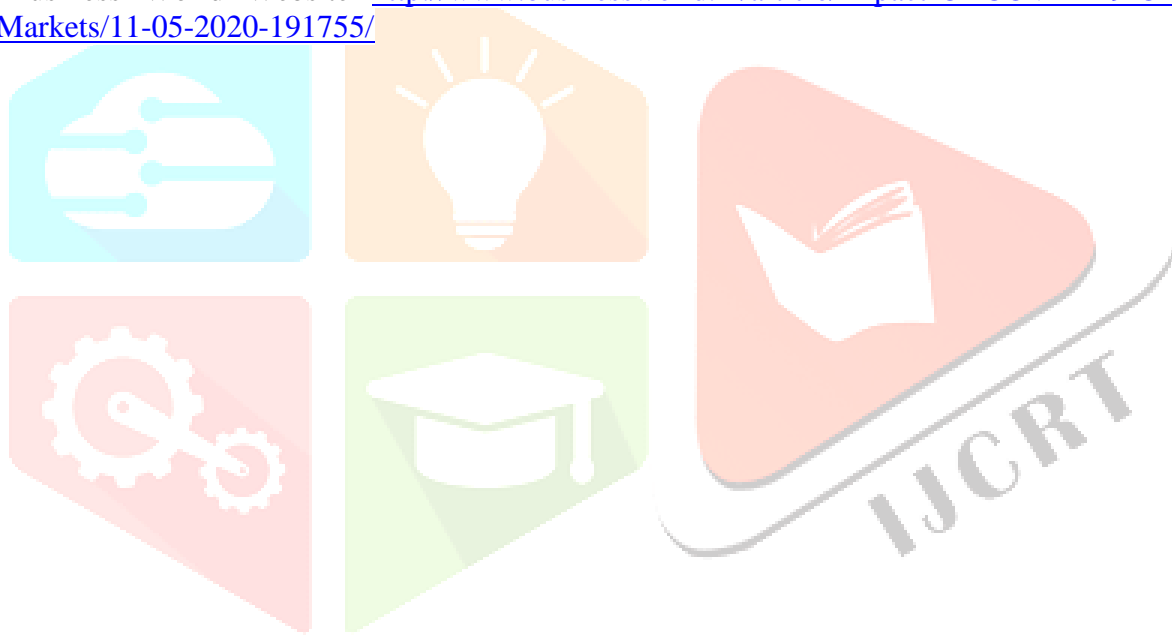
At 99% of confidence level correlation significant value of India's Bombay stock exchange with number of COVID19 cases is 0.000 which is a strong evidence to reject null hypothesis i.e., there is negative relationship between no. of COVID19 cases and Market value of Bombay stock exchange of India. At 99% of confidence level correlation significant value of China's Shanghai stock exchange with number of COVID19 cases is 0.394 which is a strong evidence to accept null hypothesis i.e., there is no relationship between no. of COVID19 cases and Market value of Shanghai stock exchange of China. At 95% of confidence level t – test shows that that t – statistic was – 31.10 and p – Value was 0.000 at 5% level of significance which is a strong evidence to reject null hypothesis i.e., There is no significant difference between market value of Indian and China during pandemic



peak time. All over study conclude that there is huge impact of COVID19 on India Market whereas on China's market there is minor or no impact.

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**Tables and Figures:**

**Table 1: Showing Trend in Patient of COVID19 as well as in Bombay Stock exchange of India from 1<sup>st</sup> January, 2020 to 1<sup>st</sup> July, 2020**

DATE	Asia					
	INDIA					
	COVID – 19			Bombay Stock Exchange		
	No. of Cases	Increase/Decrease (In Numbers)	Increase/Decrease (In %)	Market Value	Increase/Decrease (In Amount)	Increase/Decrease (In %)
1 <sup>st</sup> of Jan,20	0	-	-	41306.02	-375.52	-0.90%
11 <sup>th</sup> of Jan,20	0	-	-	41599.72	293.70	0.71%
21 <sup>st</sup> of Jan,20	0	-	-	41323.81	-275.91	-0.66%
1 <sup>st</sup> of Feb ,20	1	1	-	39735.53	-1588.28	-3.84%
11 <sup>th</sup> of Feb,20	3	2	200.00%	41216.14	1480.61	3.73%
21 <sup>st</sup> of Feb,20	3	0	0.00%	41170.12	-46.02	-0.11%
1 <sup>st</sup> of March,20	3	0	0.00%	38144.02	-3026.10	-7.35%
11 <sup>th</sup> of March,20	70	67	2233.33%	35697.40	-2446.62	-6.41%
21 <sup>st</sup> of March,20	334	264	377.14%	29915.96	-5781.44	-16.20%
1 <sup>st</sup> of April,20	2059	1725	516.47%	28265.31	-1650.65	-5.52%
11th of April,20	8453	6394	310.54%	30690.02	2424.71	8.58%
21st of April,20	20081	11628	137.56%	30636.71	-53.31	-0.17%
1st of May,20	37263	17182	85.56%	33717.62	3080.91	10.06%
11th of May,20	70769	33506	89.92%	31561.22	-2156.40	-6.40%
21st of May,20	118224	47455	67.06%	30932.90	-628.32	-1.99%
1st of June,20	198371	80147	67.79%	33303.52	2370.62	7.66%
11th of June,20	298289	99918	50.37%	33538.37	234.85	0.71%
21st of June,20	426901	128612	43.12%	34911.32	1372.95	4.09%
1st of July,20	605221	178320	41.77%	35414.45	503.13	1.44%

**Table2: -Correlation between No. of COVID19 Patient and Bombay Stock exchange of India**

Spearman's rho Correlations		
No. of COVID19 Cases	Market Value	
	Correlation Coefficient	<b>-.754**</b>
	Sig. (2-tailed)	<b>.000</b>
	N	25

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 3: Showing Trend in Patient of COVID19 as well as in Shanghai Stock exchange of China from 1<sup>st</sup> January, 2020 to 1<sup>st</sup> April, 2020**

DATE	Asia					
	CHINA					
	COVID – 19			Shanghai Stock Exchange		
	NO. of Cases	Increase/ Decrease (In Numbers)	Increase/ Decrease (In %)	Market Value	Increase/ Decrease (In Amount)	Increase/ Decrease (In %)
1 <sup>st</sup> of Jan,20	27	26	2600.00%	3050.12	45.18	1.50%
11 <sup>th</sup> of Jan,20	41	14	51.85%	3092.29	42.17	1.38%
21 <sup>st</sup> of Jan,20	440	399	973.17%	3052.14	-40.15	-1.30%
1 <sup>st</sup> of Feb,20	14380	13940	3168.18%	2746.61	-305.53	-10.01%
11 <sup>th</sup> of Feb,20	44653	30273	210.52%	2901.67	155.06	5.65%
21 <sup>st</sup> of Feb,20	76288	31635	70.85%	3039.67	138.00	4.76%
1 <sup>st</sup> of March,20	80026	3738	4.90%	2880.30	-159.37	-5.24%
11 <sup>th</sup> of March,20	80793	767	0.96%	2968.52	88.22	3.06%
21 <sup>st</sup> of March,20	81054	261	0.32%	2745.62	-222.90	-7.51%
1 <sup>st</sup> of April,20	81589	535	0.66%	2734.52	-11.10	-0.40%
11 <sup>th</sup> of April,20	82052	463	0.57%	2783.05	48.53	1.77%
21 <sup>st</sup> of April,20	82758	706	0.86%	2827.01	43.96	1.58%
1 <sup>st</sup> of May,20	82874	116	0.14%	2860.08	33.07	1.17%
11 <sup>th</sup> of May,20	82918	44	0.05%	2894.80	34.72	1.21%
21 <sup>st</sup> of May,20	82967	49	0.06%	2867.92	-26.88	-0.93%
1 <sup>st</sup> of June,20	83017	50	0.06%	2915.43	47.51	1.66%
11 <sup>th</sup> of June,20	83057	40	0.05%	2920.90	5.47	0.19%
21 <sup>st</sup> of June,20	83378	321	0.39%	2965.27	44.37	1.52%
1 <sup>st</sup> of July,20	83534	156	0.19%	3052.98	87.71	2.96%

**Table 4: Correlation between No. of COVID19 Patient and Shanghai Stock exchange of China**

Spearman's rho Correlations		
No. of COVID19 Cases	Market Value	
	Correlation Coefficient	-0.178
	Sig. (2-tailed)	.394
	N	25



Figure 1: % Change in market value of Stock market of India and China

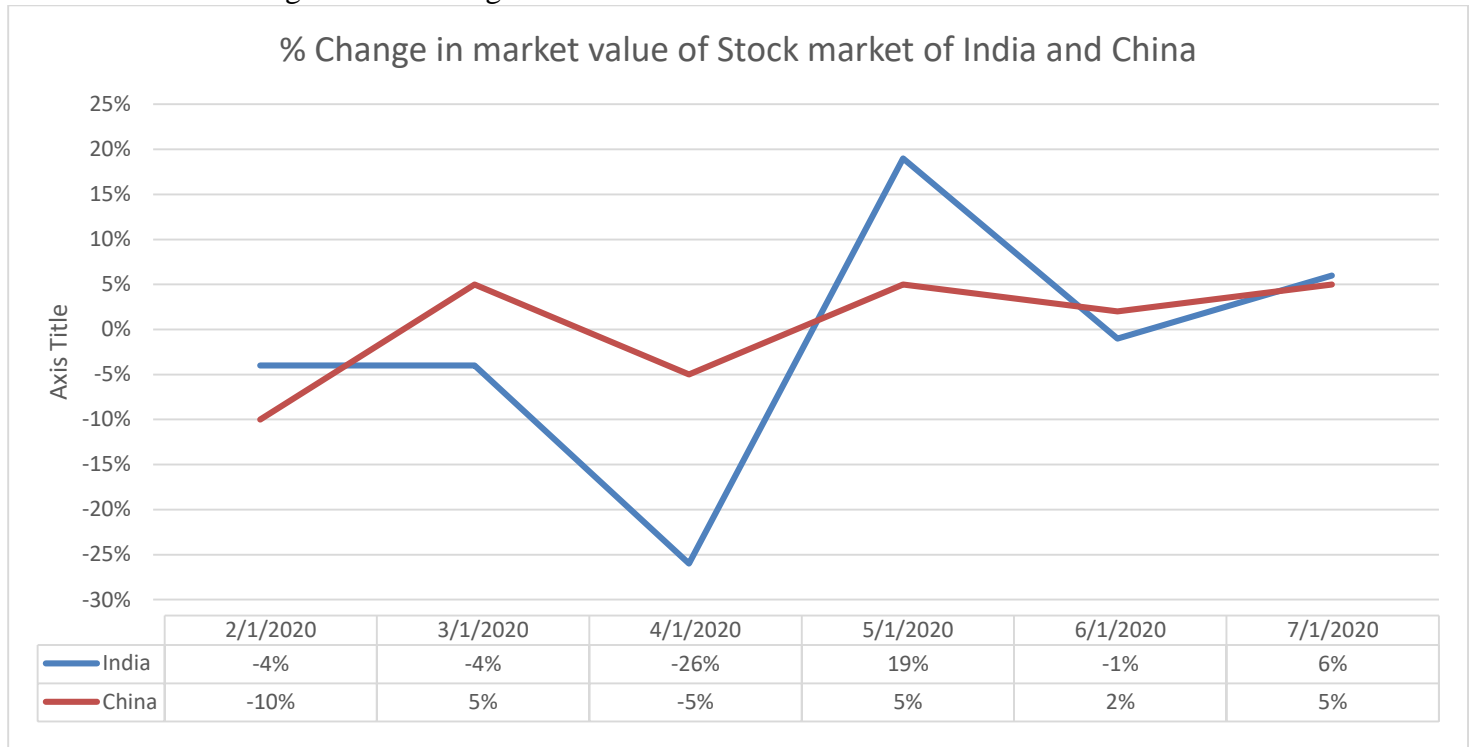


Table 5: Showing t – test results

Variable	Mean	Variance	t – Statistics	P – Value
Market Value of Bombay Stock Exchange	35425.270	20744808	- 31.10	<b>0.000</b>
Market Value of Shanghai Stock Exchange	2910.468	12772.628		