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THE PERFORMANCE OF PHARMACEUTICAL STOCKS IN NATIONAL STOCK EXCHANGE DURING THE OUTBREAK OF COVID-19

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Abstract
India plays a vital role in the Global Pharma sector and it is the 3rd largest producer of drugs in terms of volume, vaccine production and accounts for up to 60 percent of global production. Due to the pandemic, the effect of lockdown has severely affected all major sectors of the economy, but it is a boon in disguise to the Indian pharmaceutical sector. This pandemic has not only affected public health but the financial market has been deeply affected with a rapid fall in the share price and increased volatility, as it disrupts the market stability and position of systematic risk in the market. The purpose of this paper is to analyze the performance of pharmaceutical stocks in the National Stock Exchange during the outbreak of COVID-19. The statistical tools like Daily Return, Daily Variance, Standard Deviation, and Beta are adopted in the study to analyze the data of 10 pharmaceutical stocks from July 30, 2020, to August 1, 2019. During the pandemic period, the returns of pharmaceutical companies are showing positive while comparing it with Nifty50 as a benchmark.

Key Words:- National Stock Exchange, Pandemic, Volatility, Economy, Pharmaceutical, Nifty50, Daily Return, and Risk.

Introduction

The outbreak of the novel Coronavirus has made a worldwide impact ranging from ecological to economic implications. Primitively, the virus was triggered in Wuhan city, Hubei province of China in December 2019 which rapidly transmitted to all over the globe and this pandemic called for global health emergency and global economic downturn too. During this period many countries adopted stringent quarantine rules to fight the pandemic due to which transportation facilities were also restricted in many countries which led to a slowdown in their economic activities. Apart from that, consumers and firms have prevented their usual consumption pattern due to the creation of panic among them and created market abnormality.[1] This pandemic has not only affected public health but the financial market has been deeply affected with a rapid fall in the share price and increased volatility, as it disrupts the market stability and position of systematic risk in the market. Uncertainty and risk created due to this pandemic, causing significant economic impact all over the globe affecting both advanced and emerging economies like the US, Spain, Italy, Brazil, and India.[2]

India plays an essential role in the global pharma sector and has a great pool of Scientists/Engineers with good potential to steer the pharmaceutical industry to greater heights. The Indian pharmaceutical industry supply for over 50 percent of the global demand for various vaccines and it is the 3rd largest producer of drugs in terms of volume, vaccine production and accounts for up to 60 percent of global production. Due to the pandemic, the effect of lockdown has severely affected all major sectors of the

[1] Bora, D, Basistha, D. The outbreak of COVID-19 pandemic and its impact on stock market volatily: Evidence from a worst-affected economy. JPublic Affairs.2021; e2623. https://doi.org/10.1002/pa.2623
[2] Sikdar, Dr. Sector wise stock market performance during pre and post covid era. International Journal of Engineering and Management Research 11. 200-205.10,31033/ijemr.11.2.28. www.ijemr.net https://doi.org/10.31033/ijemr.11.2.28

economy, but it is a boon in disguise to the Indian pharmaceutical sector. Though some part of the pharmaceutical business was affected such as the supply chain and import of active pharmaceutical ingredients (APIs) from China, Covid-19 has provided opportunities to the pharmaceutical sector, especially India. Indian pharma products are exported to more than 200 countries in the world, with the US being the key market, and the exports like drug formulations, intermediates, bulk drugs, biological, surgical, and Ayush and herbal products of Indian pharma have reached US$16.28 billion in the financial year 2020. Also, it was estimated that 80 percent of the antiretroviral drugs used globally to combat AIDS (Acquired Immune Deficiency Syndrome) are supplied by the Indian pharmaceutical firms, and the medical device industry in the Indian market is expected to grow the US $25 billion by 2025. Apart from that, the Government of India has taken initiatives to reduce costs and bring down healthcare expenses, and a thrust on rural health programs, life-saving drugs, and preventive vaccines will provide a space for the development of pharmaceutical companies.[3]

Review of Literature

Basistha. D and Bora. D (2002) has investigated a paper on the impact of COVID-19 on the volatility of stock prices in India by using a generalized autoregressive conditional heteroscedasticity model. For analyzing the data, daily closing prices of stock indices, Nifty, and Sensex were used from September 3, 2019, to July 10, 2020. The aim was to make a comparison of stock price returns in the pre-COVID-19 and during the COVID-19 situation. The study revealed that the Indian stock market has experienced volatility during the pandemic period also the return of indices is higher in the pre-COVID-19 period than during COVID-19.

Mahendra Dev S. and Rajeswari Sengupta (2020) has examined a paper on COVID-19 impact on the Indian economy and found that there was a potential impact of the shock on various segments of the economy, also analyzed the policies that have been announced so far by the central government and the Reserve Bank of India to restructure the economic shock and to put forward a set of policy recommendations for specific sectors.

Rashmi Chaudhary, Priti Bakhshi, and Hemendra Gupta (2020) have conducted an empirical study on the impact of COVID-19 on the performance of the Indian stock market. The daily data of BSE 500 and BSE Sensex of eight sectoral indices of Bombay Stock Exchange (Auto, Bank, Consumer Durables, Capital Goods, Fast Moving Consumer Goods, Healthcare, Information Technology, and Realty) of India was measured with comparison to the composite indices of India with three global indexes S&P 500, Nikkei 225, and FTSE 100 for the study from January 2019 to May 2020. Using the GLS regression method it was found that all indices' key findings show lower mean daily return than specific, negative returns in the crisis period compared to the pre-crisis period. Also, the standard deviation of all the indices has gone up, the skewness has become negative, and the kurtosis values are exceptionally large and the relation between the indices has increased during the crisis period. The Indian stock market depicts roughly the same standard deviation as the global markets but has higher negative skewness and higher positive kurtosis of returns making the market seem more volatile.

Mittal, Shivam, and Sharma, Dipasha (2021) have investigated a study on the impact of the pandemic on the healthcare and pharma stocks by selecting daily closing prices of sector-specific indexes for 233

[3] Dr. Sujith Varma K, Professor & Head, Department of Pharmceutics, KMCT College of Pharmacy, Mampara, Kerala. Article on Covid-19 impact on Indian pharmaceutical industry.
http://www.pharmabiz.com/ArticleDetails.aspx?aid=135427&sid=9

days ranging from May 15, 2019, to April 24, 2020, to compare different sectors with the test sector. The event study methodology was applied to the study and to calculate abnormal returns, cumulative abnormal returns, and also to test their significance. It was found that the event study approach on the healthcare and pharmaceutical sector was significant, but still, when comparing it with other sectors through the other econometric model, the returns are not statistically significant and do not explicitly indicate the same.

Shahana Jabeen, Afshan Jabeen (2017) has analyzed the price behavior of shares, trends, and their future movements of pharmaceutical stocks listed in National Stock Exchange, and also the risk involved has been predicted on account of applied technical indicators. The study looks at the past share prices data to see if they can establish any trend or an entry can be made. For the analysis, techniques like Beta, Relative Strength Index, Slow Stochastic, and Simple Moving Average were used, and also the strength of the stock was inferred.

Aravind M, ManojKrishnan C G (2020) has examined that how the COVID-19 outbreak has affected leading pharmaceutical stocks listed on the National Stock Exchange of India. The data consists of 123 daily price observations, ranging from September 3, 2019, to February 28, 2020. The study signifies that pharma companies like Sun Pharma, Cipla, Glenmark with strong brand reputation were seemed to be sustained in the crisis period and only two pharma companies like Aurobindo Pharma Ltd. And Lupin Ltd. has reported a varied return trend during their study. It was suggested that the pharmaceutical sector need to enhance their research and development activities and to look for backward integration for ensuring their sustainable long-run operations.

Navneet Sharma and Dr. Trishu Sharma (2021) have researched analyzing how the positive news has helped pharmaceutical sector stocks to become multi-baggers during the pandemic. For the study, 6 months from January 2020 to June 2020 was split into three months before lockdown and three months after a lockdown in India was considered. Even though the index was 41,306 on January 1, 2020, and the day of lockdown on March 25, 2020 index was fallen to 28,535 but still it helped the pharmaceutical sector to grow significantly.

Objective of the Study

To identify the performance of selected pharmaceutical stocks in the National Stock Exchange during the pandemic.

Methodology

The methodology of the study is descriptive and analytical research-based. In this study, the investigation was done using the daily closing price of 10 Pharmaceutical companies (Sun Pharma Ltd., Divis Laboratories Ltd., Dr.Reddys Laboratories Ltd., Cipla Ltd., Cadila Healthcare Ltd., Aurobindo Pharma Ltd., Torrent Pharma Ltd., Lupin Ltd., Alkem Laboratories Ltd., and Laurus Labs Ltd.) listed on the National Stock Exchange from August 1, 2019, to July 30, 2020. The secondary data was collected from the NSE website and the 10 Pharmaceutical companies were selected based on Market Capitalisation Rate. To measure the data Nifty50 was considered as the benchmark for the study. The statistical tools were applied for analyzing the secondary data of 10 pharma companies namely Daily Return, Variance, Standard Deviation, and Beta.

Analysis and Interpretation of the Data

Table 1 Calculation of Return, Variance, Standard Deviation, and Beta of 10 Pharmaceutical Companies

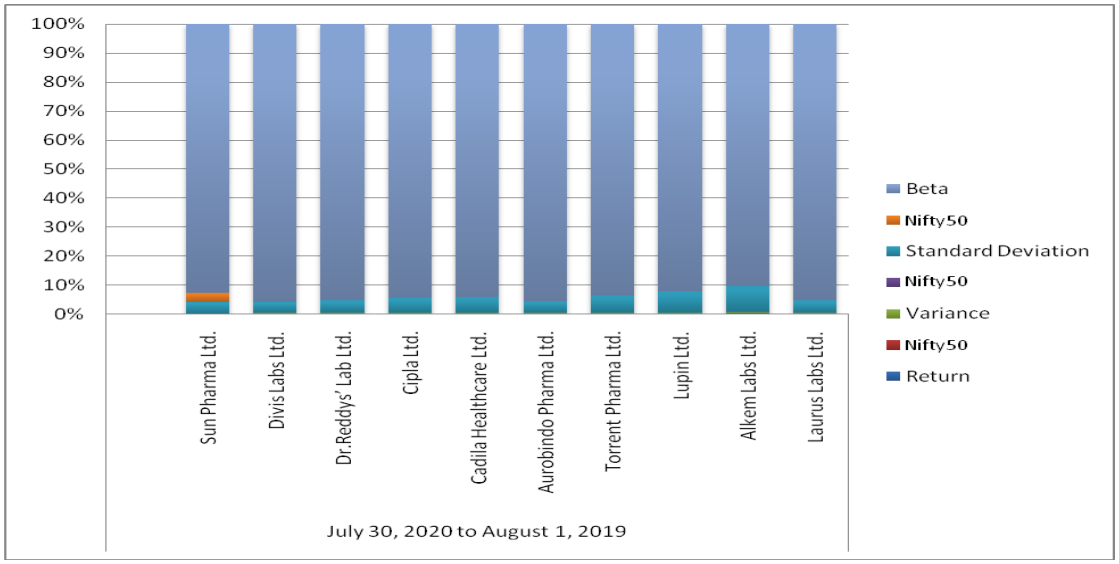
Sl. No.	Year	Company Name	Return		Variance		Standard Deviation		Beta
			Co. (%)	Nifty50	Co.	Nifty 50	Co. (%)	Nifty 50	
1	July 30, 2020 to August 1, 2019	Sun Pharma Ltd.	0.10%	0.02%	0.000553308	0.000393679	2.35%	1.98%	0.5578
2		Divis Labs Ltd.	0.21%		0.000445141		2.11%		0.5157
3		Dr.Reddys' Lab Ltd.	0.26%		0.000430142		2.07%		0.4629
4		Cipla Ltd.	0.15%		0.000543172		2.33%		0.4186
5		Cadila Healthcare Ltd.	0.23%		0.000619112		2.49%		0.4336
6		Aurobindo Pharma Ltd.	0.25%		0.001660401		4.07%		0.9413
7		Torrent Pharma Ltd.	0.18%		0.000538629		2.32%		0.3551
8		Lupin Ltd.	0.09%		0.000495941		2.23%		0.2725
9		Alkem Labs Ltd.	0.19%		0.000475186		2.18%		0.2271
10		Laurus Labs Ltd.	0.39%		0.000771114		2.78%		0.6543

(Source: Calculated from NSE database)

Analysis

The above figures are drawn by using statistical tools in MS-Excel software by using the daily closing price of 10 pharmaceutical companies.

Return, Variance, Standard Deviation, and Beta of 10 Pharmaceutical Companies



Interpretation

The **daily returns** of 10 pharmaceutical companies show a positive return when compared with Nifty50 which indicates an appreciation in stock price on the daily comparison. The **daily variance** of Sun Pharma Ltd., Divis Labs Ltd., Dr.Reddys' Lab Ltd., Cipla Ltd., Torrent Pharma Ltd., Lupin Ltd., and Alkem Labs Ltd. indicates a small variance compared to Nifty50 which means less volatile, whereas the variance of Cadila Healthcare ltd., Aurobindo Pharma Ltd., and Laurus Labs Ltd. is large when compared with Nifty50 which indicates more volatility of these stocks. The **standard deviation** of 10 pharmaceutical companies is more than Nifty50 which signifies that the company's stocks are highly volatile in the market. The **beta** of 10 pharmaceutical companies is less than 1 which indicates that stock will have lower volatility than the market.

Findings

1. The daily performance of Divis Lab Ltd., Dr.Reddys' Lab Ltd., Cadila Healthcare Ltd., Aurobindo Pharma Ltd., and Laurus Labs Ltd. are moving ahead of Nifty50, similarly, the Sun Pharma Ltd., Cipla Ltd., Torrent Pharma Ltd., and Alkem Labs Ltd. are moving moderately when compared to Nifty50. Even though Lupin Ltd. return is less compared with other pharmaceutical companies, it is moving slowly with the Nifty50.
2. The daily variance of Sun Pharma Ltd., Divis Labs Ltd., Dr.Reddys' Lab Ltd., Cipla Ltd., Torrent Pharma Ltd., Lupin Ltd., and Alkem Labs Ltd. shows low variance when compared with Nifty50, whereas Cadila Healthcare ltd., Aurobindo Pharma Ltd., and Laurus Labs Ltd. signifies a high variance.
3. The volatility of 9 pharmaceutical companies is moderate, whereas Aurobindo Pharma Ltd. company stock is more volatile when compares with Nifty50.
4. The risk of 10 pharmaceutical company's stocks is less than 1.

Suggestions

1. Lupin Ltd. needs to increase its returns by proper utilization of capital resources and invest in more profitable projects.
2. Investors use variance to assess the risk of an investment and to check the profitability of the investment. Investors who expect high returns can invest in Cadila Healthcare Ltd., Aurobindo Pharma Ltd. and Laurus Labs Ltd. as the risk is more. Whereas investors who need stable returns can invest in Sun Pharma Ltd., Divis Labs Ltd., Dr.Reddys' Lab Ltd., Cipla Ltd., Torrent Pharma Ltd., Lupin Ltd., and Alkem Labs Ltd.
3. Investors with aim of earning higher than the average returns can invest in Aurobindo Pharma Ltd. as it indicates higher risk the company needs to be cautious in retaining their investors because not all of the investors are ready to take high risks for their investments.

Conclusion

The novel coronavirus has spread across the world by tampering with the Global Economy, and public health, but it came as a boon in disguise for the healthcare and pharmaceutical industry. During this period the pharmaceutical stocks were the only sector performing exceptionally compared to other sectors. As Government of India has taken initiatives to reduce costs and bring down healthcare expenses will make space for the development of pharmaceutical companies. Even pharmaceutical companies are expecting positive effects from this initiative which helps them to diversify and enhance their manufacturing capabilities and increase their exports.

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