

An Analytic Study of the Impact of Covid-19 on Financial Performance of Selected Pharmaceutical Companies in India

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Abstract

Global economic systems experienced unprecedented disruptions because of the COVID-19 pandemic, which had a significant impact on supply chains for healthcare, financial stability, and industrial performance. During this crisis, India, one of the biggest pharmaceutical manufacturers in the world, had both significant obstacles and special opportunities. Based on market capitalisation as of April 2025, Sun Pharmaceutical Industries Ltd., Divi's Laboratories Ltd., and Cipla Ltd. are the three top Indian pharmaceutical businesses whose financial performance is examined in this study. Using only secondary data from annual reports, stock market filings, and government databases, the analysis covers a pre-pandemic period (2017–18 to 2019–20) and a post-pandemic recovery phase (2021–22 to 2023–24). The study examines how the pandemic impacted short-term solvency, long-term financial structure, and earnings performance using a thorough ratio analysis approach that includes liquidity, leverage, and profitability

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measurements and is backed by descriptive statistical tools. The results show that Sun Pharmaceutical Industries Ltd. suffered short-term financial strain, as evidenced by weakened liquidity and volatile profitability immediately following the outbreak, whereas Divi's Laboratories Ltd. and Cipla Ltd. showed improved liquidity and profitability in the post-COVID period. Overall, the analysis shows that the Indian pharmaceutical industry demonstrated significant financial resilience, highlighting its crucial role throughout the pandemic and its ability to adjust in the face of severe market instability. The study emphasises the strategic importance of strong capital structures and operational readiness during difficult times and offers insightful information about the financial flexibility of pharmaceutical companies.

Keywords: COVID-19; Impact on Financial Performance; Pharmaceutical Companies; Ratio Analysis; Profitability; Leverage and Liquidity.

Introduction

The COVID-19 pandemic, declared by the World Health Organisation (WHO) as a global health emergency and later as a global pandemic, created significant disruptions across the world. More than 200 countries were affected, and governments were forced to impose lockdowns, restrict mobility, and suspend economic activities to prevent the spread of the virus. In India, as of 10 August 2020, the Ministry of Health reported 2,215,074 confirmed cases and 44,386 deaths. The pandemic created considerable instability, affecting production, transport services, employment, and financial performance across industries.

With just four hours' warning, the Indian government declared a nationwide lockdown on March 24, 2020. Strict rules were established by the Union Ministry of Home Affairs, which suspended all commercial, industrial, educational, and transit services. Police, emergency medical treatment, electricity, water supply, sanitation, banking, insurance, telecommunications, postal services, and media were the only services allowed to function. The Disaster Management Act of 2005 made it illegal to violate containment guidelines. Consequently, 1.3 billion people's livelihoods were impacted by one of the world's strictest lockdowns on the Indian economy.

The pharmaceutical industry was in a unique position during these changes. Despite being classified as a vital industry, it encountered difficulties such as workforce shortages, transportation bottlenecks, shortages of raw materials, and shifting demand patterns. At the same time, the need for medicines, respiratory drugs, APIs, and critical-care treatments surged due to the health emergency. This dual scenario makes it essential to study the financial performance of major Indian pharmaceutical companies before and after the COVID-19 pandemic.

1. Pharmaceutical Sector:

The pharmaceutical sector is a critical component of global healthcare systems because it is responsible for the development, manufacture, and distribution of medicines. It plays a vital role in public health, life expectancy, and disease management. Pharmaceutical companies work within regulatory frameworks established by international and national agencies to ensure drug safety, efficacy, and quality.

In developing countries like India, the sector is highly significant due to its large population, rising healthcare needs, and growing demand for affordable medicines. The pharmaceutical industry also contributes substantially to employment, export earnings, and technological advancement.

2. Indian Pharmaceutical Industry: An Overview

India ranks third in the world in terms of volume and thirteenth in terms of value, making it one of the biggest producers of pharmaceuticals. The nation is frequently referred to as the “Pharmacy of the World” because of its significant contribution to the delivery of reasonably priced generic medications to international markets.

The following are some of the key features of the Indian pharmaceutical industry:

- A strong generics manufacturing base
- More than 3,000 pharmaceutical companies and over 10,000 manufacturing units
- A significant share in global vaccine production

- An expanding API (Active Pharmaceutical Ingredients) sector
- Exports to more than 200 countries
- Growth supported by government initiatives such as Pharma Vision 2020 and Jan Aushadhi.

Before COVID-19, the industry showed strong growth in domestic and foreign markets. During and after the pandemic, the sector adapted through increased digitalisation, regulatory reforms, telemedicine support, and a focus on supply-chain resilience

3. Overview of the Companies:

This study focuses on three leading Indian pharmaceutical companies selected on the basis of market capitalisation and availability of financial data from 2017–18 to 2023–24.

3.1 Sun Pharmaceutical Industries Ltd.:

Sun Pharma is India's largest pharmaceutical company and a global leader in branded generics. Founded in 1983, it operates in more than 100 countries and employs over 41,000 individuals. The company holds more than 35 of the top 300 pharmaceutical brands in India and specialises in chronic therapies such as cardiology, psychiatry, neurology, gastroenterology, and diabetology. Sun Pharma derives substantial revenue from international markets, particularly the United States.

3.2 Divi's Laboratories Ltd.:

Divi's Laboratories, established in 1990, is one of the world's leading manufacturers of Active Pharmaceutical Ingredients (APIs) and intermediates. Operating in over 100 countries, the company maintains large-scale manufacturing facilities at Hyderabad, Visakhapatnam, and Kakinada. It has a strong export-driven revenue model, accounting for approximately 90% of total sales. Divi's is recognised for its compliance with global regulatory standards and its API-centric business model.

3.3 Chemical Industrial & Pharmaceutical Laboratories Ltd. (Cipla Ltd.):

Cipla, founded in 1935, is one of India's oldest and most trusted pharmaceutical companies. It manufactures over 1,500 products

across therapeutic categories and exports to nearly 80 countries. Cipla has three major strategic business units:

1. APIs,
2. Respiratory medicines, and
3. Cipla Global Access.

The company has a major presence in India, North America, and Africa, and plays a significant role in supplying affordable medicines globally.

Objectives of a Study

The study has been undertaken to fulfil the following objectives:

1. To examine the financial performance of selected pharmaceutical companies pre- and post-COVID-19 in terms of liquidity, solvency, and profitability.
2. To propose suitable recommendations for companies and policymakers aimed at strengthening financial resilience and operational efficiency in the pharmaceutical sector.

Literature Review

Goel Ritika (2019) conducted a fundamental analysis of selected Indian pharmaceutical companies between 2013 and 2016 and highlighted significant variations in financial indicators across firms. Her study revealed that the relative financial strength of companies is segment-specific, demonstrating that industry-wide conclusions cannot be generalised without firm-level analysis. This underscores the need for focused comparative financial evaluations, especially during periods of macroeconomic disruption.

Mohanty Monalisa (2020) examined the financial performance of pharmaceutical firms using ratio analysis for the period 2015–2019. Her findings indicated strong liquidity and solvency positions but inconsistent profitability and operational efficiency. Such results reflect the sector's structural robustness while highlighting operational inefficiencies that may intensify during crises such as the pandemic.

Research Methodology and Design

The present study follows a quantitative and comparative research design to analyse the financial performance of three leading Indian pharmaceutical companies: Sun Pharmaceutical Industries Ltd., Divi's Laboratories Ltd., and Cipla Ltd., based on market capitalization across two distinct periods: the pre-COVID phase (2017–18 to 2019–20) and the post-COVID phase (2021–22 to 2023–24). The year 2020–21 was excluded due to extreme distortions during the peak pandemic period. The study relies entirely on secondary data, collected from company annual reports, published financial statements, stock exchange filings, and publicly available industry databases. Financial ratios were selected as the primary analytical indicators because they provide a structured and comparable method for evaluating liquidity, profitability, and solvency performance over time.

To ensure a robust statistical evaluation, the study uses three categories of ratios: Liquidity Ratios (Current Ratio, Quick Ratio), Profitability Ratios (Net Profit Ratio, Net Operating Profit Ratio, Earnings Per Share), and Solvency/Return Ratios (Return on Total Assets, Return on Equity). These ratios were analysed using descriptive statistics to summarise trends and variations; paired samples correlation to assess the strength of relationships between pre- and post-COVID financial performance, and the paired samples t-test to determine whether observed differences across periods were statistically significant. Together, these tools form a comprehensive methodological framework for assessing how the COVID-19 pandemic influenced financial structure and performance within the Indian pharmaceutical sector.

Data Analysis and Interpretation

This part presents a comprehensive statistical analysis of the financial performance of Sun Pharmaceutical Industries Ltd., Divi's Laboratories Ltd., and Cipla Ltd. across the pre-COVID-19 and post-COVID-19 periods. The analysis uses descriptive statistics, correlation, and paired sample t-tests to evaluate changes in liquidity, profitability, and solvency. The purpose is to identify whether the pandemic produced statistically meaningful shifts in financial performance and to understand the stability or volatility of financial indicators across time.

1. Descriptive Statistics: Descriptive statistics provide an overview of the average performance of key financial ratios and their dispersion (standard deviation) across the pre- and post-COVID periods.

Table 1: Paired Samples Statistics.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Current Ratio Pre-COVID-19	3.4533	9	2.25636	.75212
	Current Ratio Post Covid-19	4.7356	9	2.88878	.96293
Pair 2	Liquidity Ratio Pre-COVID-19	2.3144	9	1.52953	.50984
	Liquidity Ratio Post Covid-19	3.3692	9	2.00086	.66695
Pair 3	Net Profit Pre Covid-19	17.8867	9	8.45075	2.81692
	Net Profit Post Covid-19	18.8400	9	10.34255	3.44752
Pair 4	Net Operating Profit Pre-COVID-19	19.5133	9	7.20144	2.40048
	Net Operating Profit Post Covid-19	19.3833	9	10.16566	3.38855
Pair 5	ROTA Pre Covid-19	10.1700	9	4.93657	1.64552
	ROTA Post Covid-19	10.2489	9	6.15404	2.05135
Pair 6	ROE Pre Covid-19	11.8178	9	6.04874	2.01625
	ROE Post Covid-19	11.9811	9	6.78746	2.26249
Pair 7	EPS Pre Covid-19	24.7978	9	18.14908	6.04969
	EPS Post Covid-19	41.7100	9	35.17533	11.72511

1.1 Liquidity Ratios:

Current Ratio: The mean current ratio increased from 3.45 (pre-COVID) to 4.73 (post-COVID). This upward shift indicates that pharmaceutical companies improved their ability to meet short-term obligations after the pandemic. The rise suggests a deliberate strengthening of working capital as a protective measure against supply-chain disruptions and market uncertainties. The larger standard deviation in the post-COVID period reflects greater variation among companies, indicating that not all firms adopted liquidity strengthening to the same degree.

1.2 Profitability Ratios:

Net Profit Ratio: Net profit increased slightly from 17.88 to 18.84. This suggests that while profitability improved, the growth was modest. Increased demand for pharmaceuticals supported post-COVID earnings, but cost pressures such as higher logistics, safety protocols, and raw-material expenses limited profitability expansion.

Net Operating Profit Ratio: The net operating profit remained nearly unchanged (19.51 pre-COVID vs. 19.38 post-COVID). This indicates that core operating efficiency was largely stable. The pandemic did not drastically alter operating-level profitability despite disruptions.

1.3 Return Ratios:

ROTA (Return on Total Assets): ROTA remained almost constant (from 10.17 to 10.24), signifying stable asset utilisation across periods. Even during disruption, companies were able to effectively leverage their assets without a significant decline.

ROE (Return on Equity): ROE exhibited minor improvement (11.81 to 11.98), indicating consistent returns to shareholders. This consistency demonstrates financial resilience and the ability to sustain earnings through a global crisis.

Earnings Per Share (EPS): EPS showed the most substantial rise from 24.79 to 41.71. This significant jump suggests strong earnings growth for shareholders in the post-COVID period. However, the sharp increase in standard deviation reveals significant variation between companies, implying that some firms benefited much more than others.

2. Correlation Analysis: Correlation analysis measures the relationship between pre-COVID and post-COVID financial indicators. High positive correlation implies stability in financial behaviour across time.

		N	Correlation	Significance
Pair 1	Current Ratio Pre-COVID-19 & Current Ratio Post-Covid-19	9	.933	.000
Pair 2	Liquidity Ratio Pre-Covid-19 & Liquidity Ratio Post-Covid-19	9	.862	.003
Pair 3	Net Profit Ratio Pres-Covid-19 & Net Profit Ratio Post-Covid-19	9	.675	.046
Pair 4	Net Operating Profit Pre-Covid-19& Net Operating Profit Post-Covid-19	9	.562	.115
Pair 5	ROTA Pre-Covid-19 & ROTA Post-Covid-19	9	.688	.040
Pair 6	ROE Pre-Covid-19 & ROE Post-19	9	.682	.043
Pair 7	EPS Pre-Covid-19 & EPS Post-Covid-19	9	.755	.019

2.1 Strong and Significant Correlations:

- Current Ratio ($r = 0.933$, $p = 0.000$)
- Liquidity Ratio ($r = 0.862$, $p = 0.003$)
- EPS ($r = 0.755$, $p = 0.019$)

These correlations reveal strong continuity. Companies with strong liquidity and earnings before COVID remained strong afterward. The pandemic did not disrupt the relative ranking of firms in terms of liquidity or earnings performance.

2.2 Moderate Significant Correlations:

- Net Profit Ratio ($r = 0.675$, $p = 0.046$)
- ROTA ($r = 0.688$, $p = 0.040$)
- ROE ($r = 0.682$, $p = 0.043$)

These results show that profitability, asset returns, and equity returns remained consistent between the two periods, indicating that financial strength prior to COVID strongly predicted post-COVID outcomes.

2.3 Non-Significant Correlation:

- Net Operating Profit Ratio ($r = 0.562$, $p = 0.115$)

This indicates that operating-level profitability was more volatile. Variations across companies likely arose due to differences in production shutdowns, product-mix variations, varying levels of export dependency, and raw-material sourcing risks.

3. Paired Sample t-Test:

The paired sample t-test was conducted to examine whether the financial performance of the selected pharmaceutical companies changed significantly between the pre-COVID and post-COVID periods. Since the same firms were evaluated across two timeframes, this test appropriately measures whether the pandemic created meaningful statistical differences in key financial ratios.

Table 3 - Paired Samples Test

Pair	Mean	Paired Differences				t	Diff.	Significance (2-tailed)
		Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	Current Ratio Pre-COVID-19 – Current Ratio Post Covid-19	-1.28222	1.12887	.37629	-2.14995	-41450	-3.408	.009
Pair 2	Liquidity Ratio Pre-Covid-19 – Liquidity Ratio Post Covid-19	-1.05478	1.03145	.34382	-1.84762	-26194	-3.068	.015
Pair 3	Net Profit Pre-Covid-19 – Net Profit Post-Covid-19	-.95333	7.76756	2.58919	-6.92401	5.01734	-.368	.722
Pair 4	Net Operating Profit Pre-COVID-19 – Net Operating Profit Post-COVID-19	.13000	8.54100	2.84700	-6.43519	6.69519	.046	.965
Pair 5	ROTA Pre-Covid-19 – ROTA Post-Covid-19.	-.07889	4.51937	1.50646	-3.55278	3.39501	-.052	.960
Pair 6	ROE Pre-Covid-19 – ROE Post-Covid-19.	-.16333	5.16512	1.72171	-4.13359	3.80693	-.095	.927
Pair 7	EPS Pre-Covid-19 – EPS Post-Covid-19.	-16.91222	24.56298	8.18766	-35.79300	1.96856	-2.066	.073

3.1 Significant Changes ($p < 0.05$):

The results show that **only the liquidity ratios**—Current Ratio ($p = 0.009$) and Quick Ratio ($p = 0.015$) recorded statistically significant differences. This indicates that pharmaceutical companies substantially improved their short-term solvency after COVID-19. The increase reflects a deliberate financial strategy: firms held more liquid assets, strengthened working capital, and reduced reliance on short-term liabilities to safeguard operations during uncertain conditions.

3.2 Non-Significant Changes ($p > 0.05$):

Profitability and return ratios: Net Profit Ratio, Net Operating Profit Ratio, Return on Total Assets (ROTA), Return on Equity (ROE), and Earnings Per Share (EPS) did not show statistically significant differences. Although the descriptive means increased slightly after the pandemic, the changes were not strong enough to be statistically meaningful. This suggests that the pharmaceutical sector maintained stable profitability and consistent returns, even during disruptions in supply chains and operational processes.

Overall, we can say that the t-test results indicate that COVID-19 had a significant impact on liquidity, but no major statistical impact on profitability or long-term financial performance. This demonstrates the industry's resilience: companies strengthened short-term financial safety while maintaining steady earnings and returns. In summary, liquidity was the most sensitive financial dimension affected by the pandemic, whereas profitability and solvency remained stable.

Conclusion and Recommendations

This study analysed the financial performance of Sun Pharma, Divi's Laboratories, and Cipla during the pre-COVID (2017–18 to 2019–20) and post-COVID (2021–22 to 2023–24) periods using ratio analysis, descriptive statistics, correlation, and paired t-tests. The results show that liquidity was the only financial area significantly affected by the pandemic. Both the Current Ratio and Quick Ratio increased substantially, and t-test values confirmed these differences as statistically significant. This indicates that companies strengthened their short-term solvency

by increasing liquid assets and adopting more cautious working-capital policies to manage operational uncertainties during the pandemic. Profitability and return ratios showed minor improvements but no statistically significant changes, meaning COVID-19 did not fundamentally alter earnings or long-term financial performance. EPS increased for some companies, but the variation across firms prevented statistical significance. Correlation results show strong continuity between pre- and post-COVID performance, confirming that financially strong companies before the pandemic continued to perform well afterwards. Overall, the findings indicate that while COVID-19 led to stronger liquidity behaviour, the pharmaceutical sector maintained stable profitability, returns, and financial resilience throughout the period.

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