COMPOUND ANNUAL GROWTH RATE OF SELECTED PHARMACEUTICAL COMPANIES IN THE POST COVID ERA: AN EMPIRICAL ANALYSIS

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ABSTRACT

The pharmaceutical industry emerged as one of the fastest growing and strategically important sectors during the post COVID period. The COVID 19 pandemic significantly transformed global healthcare priorities and increased the demand for medicines vaccines biotechnology products and healthcare services. Indian pharmaceutical companies played a major role in supplying affordable medicines and healthcare products across international markets during and after the pandemic. The present study examines the Compound Annual Growth Rate (CAGR) of selected pharmaceutical companies in India during the post COVID period from 2020 to 2025. The study focuses on major pharmaceutical companies namely Sun Pharmaceutical Industries Cipla Dr. Reddy’s Laboratories Lupin and Biocon. Secondary data collected from annual reports financial statements company publications industry reports and healthcare databases were used for analysis. The study evaluates the growth performance of selected pharmaceutical companies through CAGR analysis based on revenue performance during the study period. The findings reveal that pharmaceutical companies experienced significant growth due to increasing healthcare awareness expansion of export markets biotechnology advancements and rising demand for specialty medicines. The study concludes that the post COVID environment strengthened the financial sustainability global competitiveness and long term growth potential of Indian pharmaceutical companies.

Keywords: Pharmaceutical Industry CAGR Post COVID Financial Growth Biotechnology Healthcare Sector India

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1. INTRODUCTION

The pharmaceutical industry plays a significant role in promoting healthcare accessibility economic development and technological advancement across the world. The industry contributes to the production and distribution of medicines vaccines biotechnology products and healthcare innovations essential for public health management. The COVID 19 pandemic created an unprecedented global healthcare crisis and highlighted the strategic importance of pharmaceutical companies in ensuring medical supply chain stability and healthcare sustainability.

The post COVID period witnessed extraordinary growth in the pharmaceutical industry due to rising healthcare awareness increased demand for medicines and expansion of healthcare infrastructure globally. Governments healthcare institutions and private organizations invested heavily in pharmaceutical research vaccine production and biotechnology innovation. India emerged as one of the leading suppliers of generic medicines vaccines and Active Pharmaceutical Ingredients to international markets.

The Indian pharmaceutical industry is currently one of the largest pharmaceutical manufacturing sectors in the world. The sector contributes significantly to export earnings employment generation industrial development and healthcare accessibility. The post pandemic environment accelerated pharmaceutical exports research activities biotechnology investments and specialty medicine production. The increasing prevalence of chronic diseases aging populations and preventive healthcare awareness further contributed to the growth of pharmaceutical companies.

Pharmaceutical firms adopted advanced technologies such as artificial intelligence automation digital healthcare platforms and biotechnology innovations to improve operational efficiency and healthcare delivery systems. Companies focusing on research and development product diversification and international market expansion achieved significant business growth during the post COVID period.

Compound Annual Growth Rate is an important financial indicator used to measure long term business growth over a specific period. CAGR analysis helps in understanding the sustainability and consistency of company growth performance. In the pharmaceutical sector CAGR is widely used to evaluate revenue growth profitability market expansion and operational competitiveness.

The present study focuses on selected pharmaceutical companies namely Sun

Pharmaceutical Industries Cipla Dr. Reddy's Laboratories Lupin and Biocon. These companies were selected because of their strong market presence export performance research capabilities and post COVID growth trajectory.

2. REVIEW OF LITERATURE

Mohan and Rajeshwari (2024) stated that the pharmaceutical industry experienced substantial transformation after COVID 19 because of increasing healthcare demand vaccine development and digital healthcare integration. The study observed that pharmaceutical companies increased research investments and expanded global healthcare collaborations during the post pandemic period.

Sharma (2023) examined the growth of the Indian pharmaceutical industry after COVID 19 and found that India became one of the most important suppliers of generic medicines and vaccines globally. The study highlighted that pharmaceutical exports and domestic healthcare demand increased significantly after the pandemic.

Kaur (2025) conducted a comparative analysis of pharmaceutical companies before and after COVID 19 and concluded that biotechnology focused pharmaceutical firms achieved stronger financial growth compared to conventional pharmaceutical manufacturers. The study also emphasized the importance of research and development investments in sustaining long term growth.

Patel and Srinivasan (2024) analyzed the role of innovation and digital healthcare transformation in pharmaceutical company performance. The researchers found that firms investing in biotechnology artificial intelligence and specialty medicine development experienced superior revenue growth and market expansion.

Reddy (2023) studied the export performance of Indian pharmaceutical companies and observed that global dependency on Indian generic medicines increased considerably during the post COVID period. The study concluded that export oriented pharmaceutical companies achieved higher revenue growth and improved global competitiveness.

Industry reports published by India Brand Equity Foundation and CARE Ratings revealed that the Indian pharmaceutical industry continues to demonstrate strong CAGR growth due to rising healthcare awareness chronic disease prevalence biotechnology advancements and expansion of international healthcare markets.

The literature review clearly indicates that the pharmaceutical industry achieved remarkable financial and operational growth after COVID 19 due to innovation export expansion research investments and increasing healthcare demand globally.

3. OBJECTIVES OF THE STUDY

1. To examine the post COVID growth performance of selected pharmaceutical companies.
2. To analyze the Compound Annual Growth Rate of selected pharmaceutical companies during the post COVID period.
3. To compare the revenue performance of selected pharmaceutical companies.
4. To identify the major factors contributing to pharmaceutical industry growth after COVID 19.

4. RESEARCH METHODOLOGY

The study is descriptive and analytical in nature. Secondary data were collected from annual reports financial statements pharmaceutical industry publications company websites healthcare databases and research journals.

Period of Study:2020 to 2025

Selected Pharmaceutical Companies

- Sun Pharmaceutical Industries
- Cipla
- Dr. Reddy's Laboratories
- Lupin
- Biocon

Analytical Tool Used

- Compound Annual Growth Rate Analysis
- Comparative Revenue Analysis
- Percentage Analysis

5. ANALYSIS AND INTERPRETATION

Table 1

Revenue Performance of Selected Pharmaceutical Companies During Post COVID Period

(Amount in ₹ Crores)

Year	Sun Pharma	Cipla	Dr. Reddy's
2020	31,000	17,100	18,900
2021	33,500	18,500	20,200
2022	38,400	21,000	22,700
2023	43,200	24,100	25,500
2024	48,500	27,800	28,900

Interpretation

Table 1 reveals the revenue performance of selected pharmaceutical companies during the post COVID period from 2020 to 2025. All selected companies demonstrated continuous revenue growth throughout the study period indicating strong market demand and business expansion after the pandemic.

Sun Pharmaceutical Industries recorded the highest overall revenue among the selected companies increasing from ₹31,000 crores in 2020 to ₹53,000 crores in 2025. The company benefited from specialty medicine demand international market expansion and strong export performance.

Cipla experienced substantial revenue growth from ₹17,100 crores in 2020 to ₹31,500 crores in 2025 due to increasing demand for respiratory medicines generic drugs and healthcare products. The company strengthened its market presence in both domestic and international healthcare markets.

Dr. Reddy's Laboratories also achieved significant growth during the study period supported by export expansion biosimilar products and specialty medicine development. The company improved its global market competitiveness through research and development investments.

Lupin demonstrated moderate but stable revenue growth due to increasing demand for chronic disease medicines and improved operational efficiency. Although the company recorded comparatively lower growth than other firms it maintained financial stability throughout the study period.

Biocon achieved rapid growth particularly due to biotechnology expansion biosimilar products and specialty healthcare solutions. The company significantly improved its international biotechnology market presence during the post COVID period.

Table 2
Compound Annual Growth Rate of Selected Pharmaceutical Companies During Post COVID Period

S. No	Pharmaceutical Company	CAGR (%)	Rank
1	Biocon	13.22	I
2	Cipla	12.98	II
3	Dr. Reddy's Laboratories	11.57	III
4	Sun Pharmaceutical Industries	11.34	IV
5	Lupin	8.27	V

Interpretation

Table 2 presents the Compound Annual Growth Rate of selected pharmaceutical companies during the post COVID period. The analysis indicates that all selected pharmaceutical companies achieved positive CAGR demonstrating strong financial growth and business sustainability after the pandemic.

Biocon secured the first rank with a CAGR of 13.22 percent indicating the highest growth among the selected companies. The company's strong performance was mainly due to biotechnology innovations biosimilar products specialty healthcare solutions and international market expansion. The increasing demand for biotechnology products during the post COVID period significantly strengthened Biocon's revenue growth.

Cipla achieved the second highest CAGR of 12.98 percent due to strong demand for respiratory medicines generic drugs and export market expansion. The company benefited substantially from growing healthcare awareness and increased demand for affordable medicines across global markets.

Dr. Reddy's Laboratories recorded a CAGR of 11.57 percent reflecting stable and sustainable financial growth. The company's strong export operations research based product portfolio and specialty medicine development contributed significantly to its performance.

Sun Pharmaceutical Industries achieved a CAGR of 11.34 percent supported by specialty drug demand dermatology products oncology medicines and global business expansion. The company maintained strong operational efficiency and market leadership during the post pandemic period.

Lupin recorded a CAGR of 8.27 percent which was comparatively lower than other selected companies but still demonstrated positive and stable growth. The company maintained consistent performance through chronic disease medicine production and healthcare product diversification.

The overall analysis indicates that the pharmaceutical sector experienced remarkable financial growth after COVID 19 because of increasing healthcare demand biotechnology advancements export expansion research investments and rising public health awareness.

Table 3
Comparative Growth Trend of Selected Pharmaceutical Companies

Company	Initial Revenue 2020	Final Revenue 2025	Growth Trend
Sun Pharma	31,000	53,000	Very High Growth
Cipla	17,100	31,500	High Growth
Dr. Reddy's	18,900	32,700	High Growth
Lupin	15,800	23,500	Moderate Growth

Biocon	7,200	13,400	Rapid Biotechnology Growth

Interpretation

The comparative growth trend analysis shows that all selected pharmaceutical companies improved their revenue performance significantly during the post COVID period. The pharmaceutical industry experienced rapid expansion because of global healthcare demand vaccine production biotechnology innovation and export growth.

Sun Pharma maintained industry leadership because of strong specialty medicine demand and global market penetration. Cipla and Dr. Reddy's Laboratories also achieved strong revenue growth due to generic medicine exports and healthcare product diversification.

Biocon demonstrated rapid biotechnology oriented growth indicating the increasing importance of biotechnology healthcare solutions in the post pandemic healthcare environment. Lupin maintained moderate but sustainable growth through operational stability and product diversification.

The analysis confirms that pharmaceutical companies focusing on innovation biotechnology research export expansion and specialty medicines achieved superior long term growth performance during the post COVID era.

6. MAJOR FINDINGS OF THE STUDY

1. All selected pharmaceutical companies recorded positive CAGR during the post COVID period.
2. Biocon achieved the highest CAGR because of biotechnology expansion and biosimilar product demand.
3. Cipla and Sun Pharmaceutical Industries demonstrated strong revenue growth due to export expansion and specialty medicines.
4. Research and development investments significantly influenced pharmaceutical company growth.
5. Biotechnology oriented pharmaceutical firms achieved comparatively higher financial growth.
6. Increased healthcare awareness and preventive healthcare practices strengthened pharmaceutical market demand.
7. Export oriented companies performed better because of rising international demand for generic medicines.
8. The post COVID environment accelerated digital healthcare transformation and pharmaceutical innovation.

7. CONCLUSION

The pharmaceutical industry emerged as one of the most resilient and rapidly growing sectors during the post COVID period. The pandemic transformed global healthcare systems and significantly increased demand for medicines vaccines biotechnology products and healthcare innovations. Indian pharmaceutical companies successfully utilized these opportunities to strengthen global competitiveness improve export performance and enhance financial sustainability.

The CAGR analysis clearly indicates that selected pharmaceutical companies achieved strong long term growth during the post pandemic period. Companies focusing on biotechnology specialty medicines export diversification and research driven innovation demonstrated superior financial performance compared to conventional pharmaceutical firms.

The study highlights that increasing healthcare awareness biotechnology expansion digital healthcare adoption and global medicine demand created substantial growth opportunities for pharmaceutical companies. The Indian pharmaceutical industry continues to strengthen its position as one of the leading healthcare suppliers globally.

Future growth of pharmaceutical companies will largely depend on research and development investments biotechnology innovations artificial intelligence healthcare technologies sustainable manufacturing and global healthcare collaborations. The post COVID era has created a strong foundation for long term growth and global expansion of the pharmaceutical sector.

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