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Assessing Financial Performance: A Ratio Analysis of Selected Pharmaceutical Companies in India

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Abstract: The financial performance analysis establishes linkages between the balance sheet and profit and loss account elements to determine the firm's financial strengths and weaknesses. The main objective of this study is to analyze and contrast the financial performance of different Indian pharmaceutical firms listed on BSE. Different profitability, liquidity, and solvency ratios are used to analyze financial performance to understand the data. These figures are derived and calculated from the financial statements of the Indian pharmaceutical firms chosen for five years, from 2017 to 2021. The findings suggest that pharmaceutical enterprises are very liquid and solvent, but profit generation is inconsistent for a few firms. To maintain their long-term viability and attract investors, companies with low ratios must improve their performance and reduce operational costs. Regulators, financial analysts, and managers interested in learning more about the financial performance of the select Indian pharmaceutical firms would find this study quite beneficial.

Keywords: financial ratio analysis; liquidity; profitability; solvency; pharmaceutical firms

1. Introduction

Today's business organizations confront several problems due to far-reaching changes in the environment and external milieu, both of which have altered dramatically in recent years. The influence of these developments on the corporate environment has been significant, and the business climate has become increasingly dynamic and competitive. This has created a need for firms to examine how they will face the new challenge and implement effective strategies not just to overcome problems but also to help them manage these changes and remain competitive to grow their market share^{1) 2)}. A company's existence and expansion are only feasible if its finances are adequately used. As a result, it is accurate to claim that without enough financing, no firm can exist, and without competent financial management, no business can develop and create³⁾. As a result, a firm's success depends on the proper supply of finance and its effective administration^{4) 5)}. Pharmaceutical firms face problems in the local market as competition from MNCs in these areas has increased⁶⁾. They are quickly growing their field force to broaden their geographic reach⁷⁾. Pharmaceutical firms have entered a challenging time in which shareholders, the market, and laws have produced substantial demands for change within the sector. The pharmaceutical industry also confronts problems in infrastructure, new product patents, medication pricing

control, quality management, and R&D programs⁸⁾⁹⁾ (IBEF,2021).

India is a major participant in the global pharmaceutical sector. More than half of the world's vaccine demand is met by the Indian pharmaceutical industry, which also provides 40% of the generic market in the US and 25% of all medicines in the UK. Pharmaceutical manufacturing in India is the world's third-largest by volume and the fourteenth largest by value. According to the Indian Economic Survey 2021, the domestic market will likely double over the next decade. In 2021, this industry was expected to be valued at around \$42 billion, with the potential to expand to \$65 billion by 2024 and to \$120–130 billion by 2030. In the next five years, India's medical expenditure is expected to expand by 9-12 percent, making it one of the top 10 nations in the world for medication expenditures¹⁰⁾ (IBEF, 2022). The production costs of Indian medications are far cheaper than those in the United States and Europe, which are about half the costs in Europe. Because of this, India has an advantage over its competitors. Indian medicines are sold in more than 200 nations worldwide, with the United States being the most popular. The amount of generic pharmaceuticals exported from this country accounts for twenty percent of the world's total exports, making India the largest provider of generic medications in the world, with more increases expected in the near future¹¹⁾.

The ability of a company to earn revenue from its

principal mode of business is assessed by its financial performance, which is a subjective notion. But this phrase is also a wide measure of a company's long-term financial stability. Thus, it may be used to compare similar firms in the same industry or different industries or sectors in general. The pharmaceutical industry was chosen for this study because it is a large and rapidly growing sector in the Indian economy. Specifically, this study examines the financial health of a selected group of Indian pharmaceutical¹²⁾.

2. Literature Review

Researchers, economists, and academics in India have performed several studies on different aspects of the pharmaceutical industry's operations. In addition, a variety of writers have examined financial performance from a variety of points of view. A review of these studies is essential to construct an approach that can be applied to the research of selected Indian pharmaceuticals.

A company's financial ratios, as described by¹³⁾, may provide valuable insight. This method may diagnose a company's financial health before it goes bankrupt. According to the research findings, ratios may be used to assess a borrower's creditworthiness. Used monetary ratios to build a model to identify dishonesty in financial accounts¹⁴⁾. Several measures may reveal whether or not financial statements are truthful, including liquidity, activity, profitability, solvency, and structural integrity.

A company's management performance is directly correlated with its financial health¹⁵⁾. The net profit ratio is influenced by gross profit ratio, operating ratio, return on equity capital, and profits per share of the chosen pharmaceutical businesses throughout the research period. Nevertheless, the selected Indian pharmaceutical businesses' profitability during the research is adequate. Even though the company's income fluctuated a little throughout the research period, the fluctuations had little impact on daily operations⁸⁾. The pharmaceutical industry can only enhance its performance by investing more money and making more sales if it wants to do so.

Financial performance analysis evaluates a company's fiscal strengths and weaknesses by establishing a proper relationship between the profit and loss account and the balance sheet. In addition, it is beneficial to both the short-term and long-term planning of the organization, as well as its growth. Evaluating the connection between the different parts of a financial statement is a necessary step in analyzing financial statements. As a result, it assists in formulating a plan to address these shortcomings and offers a better insight into the company's long-term financial performance¹⁶⁾. Financial performance analysis is crucial for risk management, measuring a firm's policies and operations in monetary terms. This study assesses the financial health of Indian pharmaceutical companies using the Z-score model¹⁷⁾.

Aspect of Analysis	Identified Gap
Application of Financial Ratios	Limited comprehensive application of financial ratios in assessing the financial health of Indian pharmaceutical companies
Creditworthiness Assessment	Insufficient exploration of the application of financial ratios in predicting a company's creditworthiness in the Indian pharmaceutical context.
Detection of Financial Dishonesty	Lack of research on the use of monetary ratios to identify potential financial irregularities or dishonesty in the financial accounts of pharmaceutical companies in India.
Correlation between Management Performance and Financial Health	Limited investigation into the direct correlation between management performance and financial health in Indian pharmaceutical firms
Impact of Profitability on Operations	Inadequate analysis regarding the impact of profitability fluctuations on the day-to-day operations of Indian pharmaceutical companies.
Strategies for Performance Enhancement	Limited exploration of specific strategies, such as investment and sales growth, to improve the financial performance of pharmaceutical firms in India.
Financial Statement Analysis	Limited studies evaluate the connection between the profit and loss account and balance sheet in Indian pharmaceutical companies for assessing fiscal strengths and weaknesses.

Research Gap - The genesis of this research stems from a notable void in the existing literature regarding the specific determinants affecting the financial performance of pharmaceutical companies operating in India. While previous studies have extensively examined various aspects of the pharmaceutical industry's operations and financial metrics, there is a conspicuous absence of comprehensive research delving into the external factors that influence the financial performance of pharmaceutical firms in the Indian context. Identifying this gap prompted the establishment of research objectives to assess the profitability, liquidity, and solvency of selected pharmaceutical companies in India, offering valuable insights into their financial standing and resilience. This study endeavors to bridge this void by meticulously examining the financial well-being of the designated pharmaceutical firms, utilizing ratio analysis

to juxtapose their long-term financial stability and performance.

Novelty Highlighted - The novelty highlighted in this research paper lies in its comprehensive examination of the financial health of Indian pharmaceutical firms, specifically in terms of profitability, liquidity, and solvency ratios. The study aims to provide valuable insights into the strengths and weaknesses of the selected pharmaceutical companies, offering a thorough understanding of their financial performance and stability. This analysis is particularly significant given the dynamic and competitive environment in which pharmaceutical firms operate, and the challenges they face in the Indian market due to factors such as competition, market demands, infrastructure, and regulatory changes. The study's findings and insights can support strategic decision-making and financial management within the pharmaceutical industry, guiding future actions to improve performance and attract investors.

Research Objectives

The financial performance of selected pharmaceutical firms is compared in this study.

The objectives are to compare:

1. To examine the profitability position of selected pharmaceutical firms in India.

To evaluate the profitability of a firm by applying profitability ratios.

2. To evaluate the liquidity position of chosen pharmaceutical firms in India.

To assess the capacity of a chosen group of enterprises to meet their short-term obligations by using various ratios.

3. To analyze the solvency of select companies in India.

To find out whether a firm is reputable. If its long-term leverage ratios allow it to satisfy all of its obligations.

3. Research Methodology

The study uses data gathered from financial statements and annual reports of pharmaceutical businesses. Pharmaceutical firms may be categorized into three groups: large, medium, and small market capitalizations. The twenty largest BSE-listed firms with a market value of at least 80 percent have been identified. Thus, the study's sample size is based on large market capitalization corporations adopting judgmental sampling techniques.

Variables Description

Table 2: Description of variables

Variables	Category	Formula	Description
Objective 1			
Return on Equity	Profitability factor	Net Income divided by shareholder's equity	It shows investors how much money they may expect to earn from the equity shares they possess.
Net Profit Ratio	Profitability factor	Net Profit divided by Net sales	It measures the profitability with respect to sales.

The research has a five-year time horizon (2021- 2017). The financial ratios of the organizations are utilized as variables for comparison, analysis, and concluding. This information was gleaned from the financial accounts of the firms in question during the period mentioned above. In addition, statistical methods such as the mean, standard deviation, coefficient of variation, and CAGR are used to conduct a more thorough examination. A total of eight indicators were divided into three key categories: profitability, liquidity, and solvency.

Sample Size

Table 1: Top listed pharmaceutical companies in India by market capitalization as of 2021 (BSE)

Company Name	Market Capitalization (IN R Crores)	Market Cap %
Sun Pharmaceutical Inds. Ltd.	187172.12	14.63
Divi'S Laboratories Ltd.	135006.7	10.55
Dr. Reddy'S Laboratories Ltd.	82081.73	6.42
Cipla Ltd.	76647.99	5.99
Gland Pharma Ltd.	62578.47	4.89
Cadila Healthcare Ltd.	56863.78	4.44
Torrent Pharmaceuticals Ltd.	52880.41	4.13
Alkem Laboratories Ltd.	45790.41	3.58
Abbott India Ltd.	45523.44	3.56
Lupin Ltd.	44671.14	3.49
AurobindoPharma Ltd.	43122.15	3.37
Biocon Ltd.	42447.21	3.32
Laurus Labs Ltd.	34659.15	2.71
Ipca Laboratories Ltd.	32914.95	2.57
Syngene International Ltd.	26837.33	2.10
Glaxosmithkline Pharmaceuticals Ltd.	26065.66	2.04
Sanofi India Ltd.	18900.08	1.48
Ajanta Pharma Ltd.	18462.42	1.44
NatcoPharma Ltd.	17686.77	1.38
Glenmark Pharmaceuticals Ltd.	14643.12	1.14

Source: Author Compilation, CMIE Database

The top 20 listed Indian pharmaceutical businesses by market capitalization in 2021 are selected from among those listed on India's primary stock exchange, the Bombay Stock Exchange of India.

Return on Asset	Profitability factor	Net Income divided by average total assets	It measures how well a firm's investment generates value. (Hayes A, 2021)
Objective 2			
Current Ratio	Liquidity factor	Current Assets divided by Current Liability	It reveals the company's ability to pay down its short-term debts using its current assets.
Quick Ratio	Liquidity factor	Liquid Assets divided by Current Liability	It provides information about the company's ability to use its cash and cash equivalents.
Cash to Current Liabilities Ratio/ Doom's Day ratio	Liquidity factor	A ratio calculated by dividing a company's cash and cash equivalents by its current liabilities.	A firm's capacity to meet its short-term liabilities only with cash and cash equivalents is shown by this liquidity indicator.(Tuovila A, 2021)
Objective 3			
Debt Equity Ratio	Solvency Factor	Total liabilities by total shareholders' equity	It reveals the extent to which a business is using leverage. The greater the leverage ratio, the riskier a firm seems to investors.
Interest Coverage Ratio	Solvency Factor	It is calculated by dividing earnings before interest and taxes (EBIT) by the total interest expense on all of the company's outstanding debts.	It shows how quickly a firm can pay interest on its outstanding debt. (Hayes A, 2021)

Source: Author Compilation

4. Results and Discussion

The study is based on secondary data gathered over five years. The companies' annual reports have been collected

from the PROWESS CMIE database. The data is also included from various journals, reports, news articles, etc.

4.1 Profitability Factor

Table 3-Return on Equity Ratio (ROE)

Years/Company	2021	2020	2019	2018	2017	MEAN	SD	CV (%)	CAGR
SUN PHARMA	5.87%	7.66%	5.96%	5.15%	17.23%	8.37%	0.05	60.1	-0.24
DIVIS	21.35%	18.83%	19.44%	14.80%	19.79%	18.84%	0.02	13.0	0.02
DR. REDDY	11.06%	12.99%	13.91%	7.53%	10.54%	11.21%	0.02	22.1	0.01
CIPLA	12.94%	9.63%	9.96%	9.67%	7.75%	9.99%	0.02	18.7	0.14
GLAND PHARMA	16.89%	21.20%	15.79%	13.32%	19.80%	17.40%	0.03	18.1	-0.04
CADILA	14.29%	10.05%	15.83%	19.87%	20.91%	16.19%	0.04	27.1	-0.09
TORRENT	21.45%	21.25%	9.23%	14.67%	21.46%	17.61%	0.06	31.3	0.00
ALKEM	20.97%	17.86%	13.65%	12.66%	19.74%	16.98%	0.04	21.7	0.02
ABOTT	26.54%	24.38%	22.42%	23.70%	19.95%	23.40%	0.02	10.4	0.07
LUPIN	8.78%	-2.14%	4.40%	1.90%	18.95%	6.38%	0.08	126.5	-0.17
AUROBINDO	24.33%	16.84%	17.02%	20.74%	24.55%	20.70%	0.04	18.2	0.00
BIOCON	8.80%	10.13%	13.50%	8.02%	13.20%	10.73%	0.03	23.4	-0.10
LAURUS	37.82%	14.42%	6.02%	11.30%	14.30%	16.77%	0.12	73.0	0.28
IPCA	24.20%	16.58%	14.18%	8.91%	7.92%	14.36%	0.07	45.8	0.32
SYNGENE	14.35%	18.94%	16.85%	17.75%	20.33%	17.64%	0.02	12.8	-0.08
GALAXOSMITHKLINE	23.89%	5.12%	20.81%	17.05%	16.78%	16.73%	0.07	42.6	0.09
SANOFI	22.54%	16.96%	17.15%	16.09%	16.16%	17.78%	0.03	15.2	0.09

AJANTA	21.83%	18.00%	17.24%	22.96%	32.33%	22.47%	0.06	26.8	-0.09
NATCO	10.69%	12.18%	18.46%	22.63%	29.39%	18.67%	0.08	41.2	-0.22
GLENMARK	13.73%	12.78%	16.50%	15.57%	24.68%	16.65%	0.05	28.4	-0.14

Source: Author Compilation, CMIE Database

Interpretation

Regarding business strategy, goods, and services, return on equity (ROE) tells investors how well the company's management is handling the company's finances. It is the amount of money a firm bears to its shareholders at a particular time¹⁸). From 2017 through 2021, **Table 3** shows the Return on Equity (ROE) of selected pharmaceutical companies in India. The Return on Equity ratio showed a shifting tendency throughout the research period. A rise or fall in this indicator reveals how much money has been made and how much money has been set aside for paying dividends to equity owner's instead. Among Indian pharmaceutical companies, Abbott India Ltd has the greatest average Return on Equity (ROE) of 23.40 percent, while Lupin Ltd has the lowest average ROE (6.38%).

Regarding Return on Equity (ROE), Lupin Ltd. has the biggest standard deviation (0.08%). With a standard deviation of 0.02 percent, Abbott India Ltd has been determined to be steady in the Return on Equity ratio. On the other hand, Lupin Ltd has the highest co-efficient variance of return on equity ratio of 126.5 percent and has enormous volatility. More consistently, Abbott India Ltd has the lowest co-efficient variance of Return on Equity ratio of 10.4%, compared to the other Pharmaceutical Companies. Companies like Divis, Dr. Reddy, Cipla, Alkem, Abbott, Laurus, IPCA, GlaxoSmithKline, and Sanofi have good compound annual growth rates. However, the return on equity ratios of the rest of the corporations indicates a negative compound annual growth rate.

Table 4-Return on Asset Ratio (ROA)

Years/Company	2021	2020	2019	2018	2017	MEAN	SD	CV (%)	CAGR
SUN PHARMA	4.29%	5.52%	4.12%	3.36%	11.34%	5.73%	0.032	56.5	-0.22
DIVIS	18.42%	16.13%	16.83%	12.93%	17.22%	16.31%	0.021	12.6	0.02
DR. REDDY	7.33%	8.72%	8.68%	4.20%	5.92%	6.97%	0.019	27.7	0.05
CIPLA	9.56%	6.54%	6.38%	6.17%	4.78%	6.69%	0.018	26.2	0.19
GLAND PHARMA	15.35%	18.91%	12.83%	10.97%	16.72%	14.96%	0.031	21.0	-0.02
CADILA	8.93%	4.97%	7.87%	9.83%	9.77%	8.27%	0.020	24.3	-0.02
TORRENT	8.89%	7.31%	3.09%	4.76%	9.62%	6.73%	0.028	41.0	-0.02
ALKEM	13.76%	11.33%	9.27%	8.23%	13.77%	11.27%	0.025	22.5	0.00
ABOTT	17.98%	16.72%	15.31%	16.61%	13.40%	16.00%	0.017	10.8	0.08
LUPIN	5.15%	-1.08%	2.17%	0.98%	9.64%	3.37%	0.042	123.6	-0.15
AUROBINDO	15.76%	9.79%	8.94%	11.48%	14.16%	12.03%	0.029	24.0	0.03
BIOCON	4.00%	5.18%	7.43%	4.54%	7.32%	5.69%	0.016	27.9	-0.14
LAURUS	17.10%	6.81%	2.81%	5.56%	7.17%	7.89%	0.054	68.8	0.24
IPCA	18.80%	11.47%	9.78%	5.81%	4.91%	10.15%	0.055	54.6	0.40
SYNGENE	8.29%	9.90%	8.95%	9.58%	10.36%	9.42%	0.008	8.6	-0.05
GALAXOSMITHKLINE	11.50%	2.97%	11.39%	8.88%	11.21%	9.19%	0.036	39.6	0.01
SANOFI	16.36%	12.77%	12.76%	11.74%	11.97%	13.12%	0.019	14.2	0.08
AJANTA	17.30%	14.09%	14.35%	19.14%	27.43%	18.46%	0.054	29.5	-0.11
NATCO	9.20%	10.04%	14.98%	18.74%	20.97%	14.79%	0.052	35.1	-0.19
GLENMARK	6.22%	5.28%	6.96%	6.38%	9.43%	6.85%	0.016	22.8	-0.10

Source: Author Compilation, CMIE Database

Interpretation

Return on asset (ROA) is a ratio that illustrates the profitability of an asset's various resources. However, it is less essential when it comes to investments since ROA indicates the company's ability to manage its assets more effectively than ROE, suggesting the company's ability to make money¹⁹). **Table 4** shows the return on assets of selected pharmaceutical companies in India from 2017 to 2021. During the study period, the pharmaceutical industry's return on assets (ROA) ratio showed a shifting

tendency. It shows how successfully the firm can turn its assets into earnings. Ajanta Pharma Ltd. has the greatest average return on assets ratio of 18.46 percent, while Lupin Pharma has the lowest average return on assets ratio of 3.37 percent. IPCA Laboratories Ltd. has the largest standard deviation of return on assets (ROA) at 0.055%, while Syngene Ltd. has the lowest at 0.008%. Lupin Ltd. has the greatest co-efficient of return on investments, with a ratio of 123.6%. Syngene Ltd.'s return on assets ratio has the lowest covariance variance of 8.6%. The Divis, Dr. Reddy, Cipla, Abbott, Aurobindo, Laurus, IPCA,

GlaxoSmithKline, and Sanofi have the positive compound annual growth rate of 0.02, 0.05, 0.19, 0.08, 0.03, 0.24, 0.40, 0.01 and 0.08 percent respectively. The rest of the

corporations exhibit a negative compound annual growth rate on return on asset ratio.

Table 5- Net Profit Ratio (NPR)

Years/Company	2021	2020	2019	2018	2017	MEAN	SD	CV (%)	CAGR
SUN PHARMA	8.67%	11.47%	9.17%	8.16%	22.05%	11.90%	0.058	48.82	-0.21
DIVIS	28.47%	25.52%	27.35%	22.41%	25.82%	25.91%	0.023	8.85	0.02
DR. REDDY	10.25%	11.57%	12.62%	6.63%	9.10%	10.03%	0.023	23.13	0.03
CIPLA	12.55%	9.03%	9.34%	9.27%	6.88%	9.41%	0.020	21.53	0.16
GLAND PHARMA	29.12%	30.05%	22.67%	20.32%	28.77%	26.19%	0.044	16.75	0.00
CADILA	14.13%	8.26%	14.04%	14.88%	15.54%	13.37%	0.029	21.85	-0.02
TORRENT	15.64%	12.91%	5.69%	11.30%	15.94%	12.30%	0.042	33.89	0.00
ALKEM	17.88%	13.51%	10.34%	9.81%	15.46%	13.40%	0.034	25.47	0.04
ABOTT	16.03%	14.54%	12.30%	12.21%	9.58%	12.93%	0.025	19.07	0.14
LUPIN	8.02%	-1.75%	4.14%	1.63%	14.66%	5.34%	0.063	118.26	-0.14
AUROBINDO	21.53%	12.26%	12.09%	14.69%	15.25%	15.16%	0.038	25.25	0.09
BIOCON	10.42%	11.88%	16.42%	10.97%	17.55%	13.45%	0.033	24.50	-0.12
LAURUS	20.43%	9.01%	4.09%	8.10%	9.85%	10.30%	0.061	59.06	0.20
IPCA	21.05%	12.98%	11.79%	7.29%	6.06%	11.83%	0.059	50.03	0.37
SYNGENE	18.54%	20.48%	18.16%	21.46%	24.52%	20.63%	0.026	12.43	-0.07
GALAXOSMITHKLINE	11.20%	2.89%	14.24%	12.11%	11.23%	10.33%	0.043	42.01	0.00
SANOFI	16.65%	13.76%	13.89%	13.37%	13.02%	14.14%	0.014	10.22	0.06
AJANTA	22.63%	18.07%	18.83%	21.99%	25.32%	21.37%	0.030	13.83	-0.03
NATCO	21.49%	24.06%	30.77%	31.62%	23.54%	26.30%	0.046	17.43	-0.02
GLENMARK	8.86%	7.29%	9.38%	8.83%	12.07%	9.29%	0.017	18.76	-0.07

Source: Author Compilation, CMIE Database

Interpretation

The net profit ratio is one of the profitability ratios that indicate and quantifies the entire profitability after taxes, production costs, administration, and financial pay-outs. A more significant net profit margin is the consequence of increased sales, reduced loans, and expenditures. In contrast, a lower net profit margin was caused by bad deals, higher administrative costs, and expenses. According to **Table 5**, the net profit ratio of selected Indian pharmaceutical companies from 2017 to 2020. The net profit ratio displays the varying pattern across the study period. This variation demonstrates the firm's ability to deal with dire economic conditions, such as price competition, poor demand, etc.

Regarding the net profit ratio, Natco Pharma Ltd has the highest average of 26.30 percent, while Glenmark Pharma

has the lowest. A standard deviation of net profit ratio of 0.063 percent was discovered for Lupin Ltd, and 0.014 percent was found for Sanofi Ltd, which is steady in net profit ratio. Lupin Ltd has the biggest volatility of net profit ratio of 118.26 percent. In comparison, Divis has the lowest variance of net profit ratio of 8.85 percent. There is observed greater consistency in net profit ratio than the other pharmaceutical companies. The Divis, Dr. Reddy, Cipla, Alkem, Abbott, Aurobindo, Laurus, IPCA, and Sanofi exhibit positive compound annual growth rates of 0.02, 0.03, 0.16, 0.04, 0.14, 0.20, 0.37, and 0.06%, respectively. Others have a negative net profit growth rate compounded annually.

4.2 Liquidity Factor

Table 6-Current Ratio (CR)

Years/Company	2021	2020	2019	2018	2017	MEAN	SD	CV (%)	CAGR
SUN PHARMA	1.82	1.81	1.69	1.66	1.94	1.78	0.11	6.3	-0.02
DIVIS	5.57	4.05	4.08	4.17	3.74	4.32	0.72	16.6	0.10
DR. REDDY	1.56	1.46	1.5	1.27	0.99	1.36	0.23	17.1	0.12
CIPLA	2.3	2.35	2.5	2.55	2.39	2.42	0.10	4.3	-0.01
GLAND PHARMA	10	7.93	4.36	4.89	4.81	6.40	2.46	38.5	0.20
CADILA	1.1	1.06	1.16	1.33	1.19	1.17	0.10	8.9	-0.02
TORRENT	1.04	0.9	0.92	0.9	1.46	1.04	0.24	23.0	-0.08
ALKEM	1.76	1.54	1.73	1.53	1.81	1.67	0.13	7.8	-0.01
ABOTT	3.41	3.6	3.22	3.39	3	3.32	0.23	6.8	0.03

LUPIN	1.26	1.3	1.69	2.07	1.54	1.57	0.33	21.0	-0.05
AUROBINDO	1.82	1.42	1.3	1.43	1.44	1.48	0.20	13.3	0.06
BIOCON	1.01	0.85	1.13	1.61	1.68	1.26	0.37	29.4	-0.12
LAURUS	1.19	1.04	1.01	0.95	1.01	1.04	0.09	8.7	0.04
IPCA	2.75	2.01	2.15	1.94	1.78	2.13	0.37	17.6	0.11
SYNGENE	1.07	0.51	0.9	2.01	2.54	1.41	0.84	59.7	-0.19
GALAXOSMITHKLINE	1.62	1.63	1.36	1.37	2.06	1.61	0.28	17.7	-0.06
SANOFI	2.85	2.67	3.03	2.55	2.4	2.66	0.27	10.1	0.04
AJANTA	2.76	2.52	2.93	3.12	2.83	2.83	0.22	7.8	-0.01
NATCO	3.58	3.06	2.84	3.42	1.72	2.92	0.73	25.1	0.20
GLENMARK	1.63	1.53	1.66	2.16	2.55	1.91	0.44	22.8	-0.11

Source: Author Compilation, CMIE Database

Interpretation

The current ratio is a liquidity ratio that assesses a company's capacity to pay its short-term creditors using its existing assets. The higher the current ratio, the greater the company's current assets. If the current ratio value is greater, the asset performance may be unfavorable for investors²⁰). From 2017 to 2021, **Table 6** shows the current ratios of a few prominent Indian pharmaceutical firms. The current ratio fluctuated during the period of the study. The fluctuation shows a company's short-term financial condition or liquidity. Gland Pharma Ltd has the greatest current ratio of 6.40 percent, while Torrent Pharma and Laurus have the lowest average current ratio of 1.04 percent. Gland Pharma has the largest standard deviation in the current ratio of 2.46 percent. The Laurus has the lowest standard deviation of the current ratio of 0.09 percent, proven to be steady in the current ratio. Syngene Ltd has the biggest variation in the current ratio of 59.7 percent. Sun Pharma has the lowest current ratio co-

efficient variation of 6.3%, indicating that the current ratio is consistent.

A 2:1 current ratio is optimal. This indicates that the corporation should have twice as many current assets as current liabilities. It reveals that all of the companies are very liquid. All companies can pay off their existing creditors with their current assets. It's also worth noting that for five straight years, the current mean value ratio of the Divis, Gland Pharma, and Abbott was over (3:1), which isn't ideal since the business has so many underused current assets that may be invested. As a result, the other pharmaceutical companies' current ratio is significantly better than that of Divis, Gland Pharma, and Abbott. The Divis, Dr. Reddy, Gland Pharma, Abbott, Aurobindo, Laurus, IPCA, Sanofi, and NATCO all exhibit positive compound annual growth rates of 0.10, 0.12, 0.20, 0.03, 0.06, 0.04, 0.11, 0.04, and 0.20 percent. The rest of the corporations have a negative compound annual growth rate on the current ratio.

Table 7- Quick Ratio (QR)

YEARS/COMPANY	2021	2020	2019	2018	2017	MEAN	SD	CV (%)	CAGR
SUN PHARMA	1.3	1.35	1.26	1.32	1.58	1.36	0.13	9.3	-0.05
DIVIS	3.69	2.1	2.02	2.14	1.78	2.35	0.76	32.6	0.20
DR. REDDY	1.01	0.99	0.96	0.87	0.67	0.90	0.14	15.5	0.11
CIPLA	1.38	1.45	1.59	1.57	1.43	1.48	0.09	6.2	-0.01
GLAND PHARMA	7.51	5.82	2.68	3.53	3.52	4.61	2.00	43.3	0.21
CADILA	0.71	0.74	0.81	0.95	0.87	0.82	0.10	11.9	-0.05
TORRENT	0.54	0.54	0.57	0.55	0.94	0.63	0.17	27.8	-0.13
ALKEM	1.17	1.03	1.1	0.97	1.14	1.08	0.08	7.5	0.01
ABOTT	2.72	3	2.51	2.51	2.21	2.59	0.29	11.3	0.05
LUPIN	0.83	0.97	1.16	1.46	1.02	1.09	0.24	22.0	-0.05
AUROBINDO	1.01	0.77	0.7	0.76	0.78	0.80	0.12	14.8	0.07
BIOCON	0.75	0.6	0.87	1.33	1.37	0.98	0.35	35.3	-0.14
LAURUS	0.61	0.54	0.56	0.53	0.58	0.56	0.03	5.7	0.01
IPCA	1.4	1.04	1.2	1.08	0.88	1.12	0.19	17.3	0.12
SYNGENE	1.03	0.5	0.87	1.91	2.49	1.36	0.82	60.1	-0.20
GALAXOSMITHKLINE	1.28	1.27	1.09	1.11	1.63	1.28	0.22	17.0	-0.06
SANOFI	2.33	2.13	2.36	1.78	1.71	2.00	0.30	15.3	0.08
AJANTA	1.65	1.75	1.82	2.15	2	1.87	0.20	10.7	-0.05
NATCO	2.3	2.34	2.17	2.72	1.18	2.14	0.58	26.9	0.18
GLENMARK	1.14	1.06	1.11	1.54	1.77	1.32	0.31	23.7	-0.10

Source: Author Compilation, CMIE Database

Interpretation

The acid test ratio is another name for the quick ratio. This metric measures liquidity to current liabilities. The genuine liquidity of a fund is the capacity to pay its short-term debts as and when they are due. Liquid assets contain all current assets, except for stock, which takes longer to convert into cash and has a greater degree of uncertainty regarding its conversion value. At all times, it's prudent to have liquid assets equivalent to the present obligations.

Table 7 shows the liquid ratio of selected Indian pharmaceutical firms from 2017 to 2021. A declining trend indicates that the liquid ratio may be affected by a lack of cash, while a rising trend shows that the company is doing well and can meet its financial obligations on schedule.

Regarding the average liquid ratio, Gland Pharma Ltd has the greatest at 4.61 percent, while Laurus Ltd has the lowest at 0.56 percent. Gland Pharma has the widest standard variation of 2.0%. At 0.03 percent, Laurus Labs Ltd. has the lowest liquid ratio standard deviation. At 43.3% and 60.1%, respectively, Gland Pharma Ltd. and

Syngene Ltd. have the largest liquid co-efficient variances. Laurus Labs Ltd has the lowest covariance of liquid ratio variation of 5.7 percent, which indicates that the liquid ratio is consistent.

The company should have an equivalent amount of Quick assets, which are marketable securities, trade receivables, and cash at hand and bank to pay off its current liabilities. The above table shows that all the firms have even more quick assets to pay off the current liabilities than required, which means the company has many quick assets that it could use rather than keep as it is. Dr. Reddy, Cadila, Torrent, Lupin, Biocon, and Laurus have a quick ratio of less than 1, indicating that they are less liquid than most other companies. The Divis, Dr. Reddy, Gland Pharma, Alkem, Abbott, Aurobindo, Laurus, IPCA, Sanofi, and NATCO have a positive compound annual growth rate of 0.20, 0.11, 0.21, 0.01, 0.05, 0.07, 0.01, 0.12, 0.08 and 0.18 percent. The rest of the companies show a negative compound annual growth rate on quick ratio.

Table 8- Doom's Day Ratio (DDR)

YEARS/COMPANY	2021	2020	2019	2018	2017	MEAN	SD	CV (%)	CAGR
SUN PHARMA	0.37	0.38	0.4	0.49	0.79	0.49	0.18	36.3	-0.17
DIVIS	1.89	0.13	0.13	0.17	0.12	0.49	0.78	160.7	0.99
DR. REDDY	0.18	0.03	0.04	0.04	0.04	0.07	0.06	96.8	0.46
CIPLA	0.28	0.21	0.14	0.23	0.17	0.21	0.05	26.3	0.13
GLAND PHARMA	5.86	3.69	1.33	1.77	1.82	2.89	1.89	65.3	0.34
CADILA	0.11	0.11	0.07	0.21	0.28	0.16	0.09	55.4	-0.21
TORRENT	0.11	0.11	0.15	0.16	0.3	0.17	0.08	47.2	-0.22
ALKEM	0.51	0.31	0.28	0.23	0.22	0.31	0.12	38.0	0.23
ABOTT	2.34	2.47	1.97	1.54	1.73	2.01	0.39	19.6	0.08
LUPIN	0.18	0.24	0.14	0.24	0.1	0.18	0.06	34.2	0.16
AUROBINDO	0.49	0.24	0.16	0.14	0.08	0.22	0.16	72.2	0.57
BIOCON	0.29	0.17	0.27	0.52	0.5	0.35	0.15	43.8	-0.13
LAURUS	0.02	0	0	0	0	0.00	0.01	223.6	0
IPCA	0.31	0.13	0.25	0.15	0.04	0.18	0.11	60.1	0.67
SYNGENE	0.41	0.14	0.31	1.1	0.88	0.57	0.40	71.2	-0.17
GALAXOSMITHKLINE	0.72	0.83	0.66	0.69	0.9	0.76	0.10	13.3	-0.05
SANOFI	2.01	1.76	1.61	1.33	1.21	1.48	0.25	17.1	0.14
AJANTA	0.3	0.32	0.26	0.26	0.28	0.28	0.03	9.2	0.02
NATCO	0.45	0.09	0.35	0.29	0.06	0.25	0.17	67.9	0.65
GLENMARK	0.25	0.24	0.23	0.38	0.39	0.30	0.08	26.8	-0.11

Source: Author Compilation, CMIE Database

Interpretation

The Dooms Day ratio measures a company's capacity to pay its monetary obligations. It solely comprises cash and cash equivalents so that a firm may make the most of its business prospects and compete with its market competitors. From 2017 to 2021, the doomsday ratio for a few Indian pharmaceutical firms is shown in **Table 8**. The Doomsday ratio varies over the study period. Gland Pharma has the greatest average cash ratio of 2.89 percent, while Dr. Reddy has the lowest average cash ratio of 0.07 percent. Gland Pharma has the largest standard deviation

of the cash ratio of 1.89 percent. Ajanta Pharma Ltd. has the lowest dooms day standard deviation of 0.03 percent and is deemed consistent in the cash ratio. Coefficient variation in cash ratio of 160.7 percent is the greatest for Divis Labs. The cash ratio of Ajanta Pharma Ltd. has the lowest volatility of 9.2 percent. The Divis, Dr. Reddy, Cipla, GlandPharma, Alkem, Abbott, Lupin, Aurobindo, IPCA, Sanofi, Ajanta and NATCO have the positive compound annual growth rate of 0.99, 0.46, 0.13, 0.34, 0.23, 0.08, 0.16, 0.57, 0.67, 0.14, 0.02 and 0.65 per cent. The rest of the companies show a negative compound

annual growth rate on quick ratio.

4.3 Solvency Factor

Table 9-Interest Coverage Ratio (ICR)

YEARS/COMPANY	2021	2020	2019	2018	2017	MEAN	SD	CV (%)	CAGR
SUN PHARMA	45.33	16.31	8.2	7.94	22.07	19.97	15.36	76.9	0.20
DIVIS	2,993.51	268.19	486.55	841.52	585.27	1035.01	1114.03	107.6	0.50
DR. REDDY	27.23	13.3	22.99	16.17	22.8	20.50	5.64	27.5	0.05
CIPLA	19.82	10.29	10.51	13.16	7.23	12.20	4.75	38.9	0.29
GLAND PHARMA	355.28	120	169.92	110.83	86.25	168.46	108.78	64.6	0.42
CADILA	16	6.11	12.33	25.69	38.72	19.77	12.75	64.5	-0.20
TORRENT	5.1	3.36	2.71	3.11	5.41	3.94	1.23	31.2	-0.01
ALKEM	28.31	18.76	16.87	16	19.88	19.96	4.91	24.6	0.09
ABBOTT	47.61	82.81	264.02	146.31	189.5	146.05	85.87	58.8	-0.29
LUPIN	11.94	3.81	5.67	10.09	23.48	11.00	7.71	70.1	-0.16
AUROBINDO	57.43	12.77	12.51	41.35	45.06	33.82	20.23	59.8	0.06
BIOCON	16.25	16.19	13.34	7.32	28.18	16.26	7.59	46.7	-0.13
LAURUS	19.74	4.21	2.2	3.81	3.34	6.66	7.35	110.4	0.56
IPCA	147.7	42.19	27	12.61	13.68	48.64	56.66	116.5	0.81
SYNGENE	14.34	11.52	11.54	14.69	15.81	13.58	1.95	14.3	-0.02
GLAXOSMITHKLINE	174.52	90.63	1,004.02	2,589.47	1,936.56	1159.04	1093.79	94.4	-0.45
SANOFI	334.89	1,693.00	749.14	397.55	182.43	671.40	607.67	90.5	0.16
AJANTA	106.71	49.34	426.16	1,460.49	460.05	500.55	567.31	113.3	-0.31
NATCO	36.79	22.46	36.98	55.99	34	37.24	12.05	32.4	0.02
GLENMARK	4.65	3.39	3.77	4.6	7.92	4.87	1.79	36.8	-0.12

Source: Author Compilation, CMIE Database

Interpretation

This ratio measures a company's ability to pay its interest on existing debts²¹⁾²²⁾²³⁾. The capacity of a firm to pay its obligations and interest grows as the interest coverage ratio decreases. Hence this ratio is critical in determining the company's ability to pay its debts and interest. From 2017 to 2021, **Table 9** shows the interest coverage ratio of selected pharmaceutical companies in India. A measure of a company's ability to pay its debt is based on the ratio of net income to debt service. GlaxoSmithKline has the greatest average interest coverage ratio (1159.04%), and Torrent Pharma Ltd has the lowest (3.94%). Divis Labs Ltd. has the greatest interest coverage standard deviation at 114.3%. Torrent Pharma's interest coverage standard deviation is 1.23 percent. IPCA Labs' co-efficient variance of interest coverage ratio is 116.5%. Syngene's co-efficient variance of interest coverage ratio is 14.3%, and the ratio is consistent.

The interest coverage ratio measures how often a company can pay its interest expense with its operating revenue. Decreased ratios indicate that the company is

under greater financial strain due to debt repayments. An organization may not be able to satisfy interest rates if its insurance ratio is 1.5 or below, even though there is no such ideal ratio. It demonstrates that the operating revenue of all companies may be used to pay down the interest. However, the interest coverage ratio of Cadila, Torrent, Abbott, Lupin, Biocon, Syngene, GlaxoSmithKline, Ajanta, and Glenmark has decreased over time, indicating that either their operational revenue has decreased or their interest payments have increased, neither of which is a positive indicator. On the other hand, there has been an increase in the interest coverage ratio throughout the years for companies like Sun Pharma and Divis, Dr. Reddy's, Cipla, Gland Pharma, and AlkemAurobindo, Laurus, IPCA, Sanofi, and Natco. This is a favorable indicator of the company's financial health²⁴⁾²⁵⁾.

The Cadila, Torrent, Abbott, Lupin, Biocon, Syngene, GlaxoSmithKline, Ajanta, Glenmark have the negative compound annual growth rates of -0.20, -0.01, -0.29, -0.16, -0.13, -0.02, -0.45, -0.31, -0.12 and 0.15 per cent. The rest of the companies show a positive compound annual growth rate on interest coverage ratio.

Table 10- Debt Equity Ratio (DER)

YEARS/COMPANY	2021	2020	2019	2018	2017	MEAN	SD	CV (%)	CAGR
SUN PHARMA	0.07	0.17	0.24	0.26	0.22	0.19	0.08	39.6	-0.25
DIVIS	0	0.00	0.02	0.01	0.01	0.01	0.005	50.3	-1.00
DR. REDDY	0.17	0.11	0.24	0.40	0.40	0.27	0.13	49.9	-0.20
CIPLA	0.08	0.18	0.28	0.28	0.32	0.23	0.10	42.5	-0.29
GLAND PHARMA	0.00	0.00	0.00	0.00	0.00	0.00	0.001	64.9	0.41

CADILA	0.25	0.60	0.61	0.57	0.69	0.55	0.17	31.8	-0.23
TORRENT	0.62	0.91	1.03	1.24	0.52	0.86	0.30	34.3	0.05
ALKEM	0.22	0.25	0.16	0.18	0.14	0.19	0.04	23.0	0.12
ABBOTT	0.06	0.07	0	0	0	0.07	0.01	14.4	0
LUPIN	0.22	0.34	0.60	0.51	0.59	0.45	0.16	36.4	-0.22
AUROBINDO	0.23	0.32	0.49	0.38	0.33	0.35	0.09	27.2	-0.09
BIOCON	0.43	0.26	0.27	0.34	0.42	0.34	0.08	24.4	0.01
LAURUS	0.51	0.54	0.61	0.61	0.58	0.57	0.04	7.7	-0.03
IPCA	0.04	0.11	0.11	0.18	0.22	0.13	0.07	51.4	-0.35
SYNGENE	0.27	0.14	0.27	0.39	0.52	0.32	0.14	44.5	-0.15
GALAXOSMITHKLINE	0	0	0.00	0.00	0.00	0.00	0.0002	66.7	-1.00
AJANTA	0.00	0.02	0.02	0.00	0.00	0.01	0.008	125.7	-0.08
NATCO	0.06	0.08	0.11	0.06	0.13	0.09	0.032	35.9	-0.17
GLENMARK	0.62	0.74	0.69	0.86	1.05	0.79	0.168	21.2	-0.12

Source: Author Compilation, CMIE Database

Interpretation

The debt-equity ratio is a measure of long-term solvency, which reflects the strength of the company's financial policies^{26,27}. It is the ratio of the proportion of funds provided by creditors and shareholders. The ratio value of less than 1 indicates the good strength of the money funded by creditors. For the years 2017-2021, the debt-equity ratio for select Indian pharmaceutical companies is shown in **Table 10**. In the study's time frame, there was a shifting tendency in the debt-equity ratio. This suggests that the firm may be unable to meet its debt commitments if its debt-equity ratio becomes too high. On the other hand, low debt-to-equity ratios might mean a firm is not making the most of the potential gains from greater financial leverage.

Torrent Pharma Ltd has the greatest average debt-equity ratio of 0.86 percent, while Divis Labs Ltd has the lowest average debt-equity ratio of 0.01 percent. Torrent Pharma Ltd has the largest standard deviation of the debt-equity ratio of 0.30 percent. Divis Labs Ltd has the lowest standard deviation of its debt-to-equity ratio (0.005%) among all companies. All companies' mean Total Debt to Equity ratio illustrates that firms source most of their money from creditors. The variance coefficient is significantly higher for Ajanta (125.7%) compared to Laurus (7.7%), suggesting considerable volatility in Ajanta's Total Debt to Equity ratio. Laurus' Total Debt to Equity ratio is better than Ajanta's. The Gland Pharma, Torrent, Alkem, and Biocon, have the positive compound annual growth rate of 0.41, 0.05, 0.12, and 0.01 percent. The rest of the companies show a negative compound annual growth rate on the debt-equity ratio.

Major Outcomes and Discussion of Study

The study aims to analyze and contrast the financial performance of various Indian pharmaceutical firms listed on the Bombay Stock Exchange (BSE) by employing a range of profitability, liquidity, and solvency ratios. It reveals that while Indian pharmaceutical enterprises demonstrate commendable liquidity and solvency, they encounter difficulties in sustaining consistent profit generation. The significance of comprehending the

financial performance of these pharmaceutical entities is underscored for regulators, financial analysts, and managers, accentuating the necessity for firms with low ratios to enhance their performance to attract investors and ensure long-term viability. The introduction offers an encompassing overview of the evolving corporate landscape, accentuating the increasing dynamism and competitiveness in the business climate. It stresses the critical role of effective financial management in business development, particularly within the pharmaceutical industry in India, recognized as a major player in the global market with projected substantial growth and significant shares in the global generic drug market. The study's objectives are outlined, focusing on evaluating the profitability, liquidity, and solvency of selected pharmaceutical companies in India. It also highlights the novelty of the research in addressing specific determinants affecting the financial performance of pharmaceutical companies within the Indian context. The literature review delves into the importance of financial ratios in diagnosing a company's financial health, assessing creditworthiness, management performance, and long-term financial stability. The research methodology section meticulously details the data sources, sample size, and variables utilized for comparison and analysis, emphasizing the utilization of statistical methods for a comprehensive examination of financial ratios. The results and discussion section provides detailed tables and interpretations of key financial ratios, such as ROE, ROA, NPR, CR, QR, and DDR. These findings highlight the varying trends across the selected pharmaceutical companies, illustrating the firms' liquidity, profitability, and solvency. Some companies exhibit positive compound annual growth rates, while others show negative growth rates. The study concludes by offering a comprehensive insight into the financial health of the selected Indian pharmaceutical firms, providing valuable insights for strategic decision-making and financial management within the industry. In summary, the document presents a rigorous and insightful analysis of the financial performance of selected pharmaceutical companies in

India, offering valuable insights into their profitability, liquidity, and solvency. The study underscores the importance of maintaining a balance between financial stability, operational efficiency, and long-term viability, with implications for investors, regulators, and financial analysts in the pharmaceutical industry.

5 Conclusion

This study evaluates the financial health of selected pharmaceutical firms in India by analyzing their Profitability, Liquidity, and Solvency ratios. While profitability has decreased over time for all companies, they maintain strong liquidity and solvency, allowing them to meet short-term obligations and interest payments. However, there is a significant need for improved profitability, particularly among companies like Sun Pharma, Gland Pharma, Cadila, and others. To enhance performance, these firms should focus on increasing capital expenditures and revenues, while also reducing operating expenses to ensure sustainability and attract investors. The study underscores the importance of balancing financial stability, operational efficiency, and long-term viability within the industry. The objectives of the study emphasize evaluating profitability, liquidity, and solvency, with a focus on understanding specific factors affecting financial performance in the Indian context. Through a comprehensive methodology, including longitudinal and comparative analysis of financial ratios from 2017-2021, the study provides insights into industry dynamics and competitive positioning. For stakeholders such as regulators, financial analysts, and managers, understanding the financial health of Indian pharmaceutical firms is crucial for decision-making processes. The study offers valuable insights for regulatory oversight, investment analysis, and strategic planning.

Future research could explore areas such as profitability challenges, operational efficiency improvement, market dynamics, risk management, innovation impact, sustainability initiatives, corporate governance, external factors' influence, international expansion, and digital transformation within the pharmaceutical industry to deepen understanding and identify growth strategies.

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