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An Analyzing the Profitability of Pharmaceutical Companies in India - A Comparative Study

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ABSTRACT

The pharmaceutical industry in India is one of the most lucrative sectors, driven by increasing demand for healthcare products, innovations, and global exports. This study analyzes the profitability of three major pharmaceutical companies in India—Aurobindo Pharmaceutical, Mankind Pharmaceutical, and Torrent Pharmaceutical. Using key profitability metrics such as Gross Profit Ratio, Net Profit Ratio, Return on Capital Employed (ROCE), Return on Assets (ROA), Return on Equity (ROE), and Earnings Per Share (EPS), this research compares the profitability performance of the companies. The study highlights trends in profitability, efficiency, and growth, offering insights into the strategic measures taken by these companies to maintain competitiveness in the market. The analysis reveals significant differences in the companies' financial stability, operational efficiency, and profitability growth. The findings of this study will provide valuable insights for stakeholders, investors, and policymakers to make informed decisions regarding the pharmaceutical sector.

KEYWORDS: *Pharmaceutical Companies, Profitability Analysis, Financial Performance, Return on Assets (ROA), Earnings Per Share (EPS), Gross Profit Ratio*

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INTRODUCTION

Indian pharmaceutical industries have expanded significantly in recent years. Several factors, including cost advantages, a strong manufacturing base, and government assistance, have fueled this. India's pharmaceutical business has grown tremendously in recent years, ranking third in volume and fourteenth in value. It is anticipated to increase pharmaceutical quality, cost, and innovation while capturing roughly 13% of the worldwide market. An essential participant in the global pharmaceutical market is the Indian pharmaceutical sector. The Indian pharmaceutical industry includes biosimilars, biologics, contract research and manufacture, vaccines, over-the-counter (OTC), generic, and bulk medications. India is the world's top measles, BCG, and DPT vaccine supplier. Currently valued at over $50 billion, the Indian pharmaceutical industry is projected to grow to $130 billion by 2030 and $450 billion by 2047. India is the third-biggest pharmaceutical market by volume and the world's largest producer of generic medications, making up about 20% of the global supply. With 60% of global vaccine production, 90% of WHO requirements for the DPT and BCG vaccines, 70% of WHO requirements for the measles vaccine, and the most US-FDA-compliant pharmaceutical facilities outside of the US, India is a significant global supplier of reasonably priced vaccines. With a strong network of over 10,500 production facilities and a highly qualified labour pool, the nation is home to more than 3,000 pharmaceutical enterprises.

About 8,000 APIs are produced by 500 API producers, who also produce about 60,000 generic brands in 60 therapeutic categories, making up about 20% of the world's generic supply. The availability of affordable HIV treatment from India is among the most significant medical advances. Because of its excellent quality and reasonable costs, Indian pharmaceuticals are known as the "pharmacy of the world." The Indian pharmaceutical sector employs millions of people and ensures that this subcontinent's vast population has access to affordable, essential pharmaceuticals. Among the nation's science-based industries today, the Indian Pharmaceutical Industry stands out in the complex world of drug manufacture and technology. It has a wide range of abilities. It is in the top three in the third world for technology, drug quality, and diversity-produced advanced antibiotics, complex cardiac compounds, and simple headache drugs.

Company profile:

Aurobindo Pharmaceutical Company: The Aurobindo Pharma Company was founded in 1986 by P.V. Ramprasad Reddy and Shri K. Nityananda Reddy. The company in Pondicherry was the first to produce semi-synthetic penicillin (SSP) as a single unit. Aurobindo Pharma eventually went public in 1992. In 1995, it listed its stock on Indian exchanges. Important therapeutic areas that Aurobindo Pharma works in include the central nervous system, cardiovascular, antiretroviral, gastrointestinal, and anti-diabetic. It has a substantial position in the global pharmaceutical market because it consistently provides high-quality, affordable drugs, particularly in the generic drug segment. The company exports to more than 150 countries worldwide, with its primary customers being the US, Europe, and developing nations. Market capitalization, or market cap, is the total market value of all outstanding shares of a publicly listed company and is widely used to assess a company's worth.

Mankind Pharmaceutical Company: Shri Rajiv and Ramesh C. Juneja founded the Mankind Pharma Company in 1991. The company was founded in 1991 and started in 1995. The company first targeted price-sensitive drugs and focused on the rural market. Its initial offerings of Zenflox and Moxikind Cardiovascular were significantly reduced from those already on the market.

Torrent Pharmaceuticals Company: The well-known Indian pharmaceutical company Torrent Pharmaceuticals Ltd. focuses on the development, production, marketing, and development of a wide range of pharmaceutical goods. In Ahmedabad, Gujarat, India, Torrent Pharma was established in 1959 by Uttam Bhai Mehta. It belongs to the group known as Torrent. It has grown into one of India's leading pharmaceutical companies in over 40 countries globally.

Review of Literature

The Indian pharmaceutical industry has experienced significant growth over the past few decades, emerging as one of the leading sectors in the country's economy. The industry's profitability has been a key area of interest for researchers due to its critical role in both domestic and global markets. This review of the literature summarizes the key studies and findings related to the profitability of pharmaceutical companies in India, providing a comparative perspective based on various financial metrics, strategies, and market conditions. The Indian pharmaceutical industry is one of the largest in the world, driven by both domestic demand and international exports. The industry has been recognized as a significant contributor to the country's economic development, with India being the world's third-largest producer of pharmaceuticals by volume. A comparative analysis by Joshi and Patil (2015) found that private pharmaceutical companies in India tend to outperform their public counterparts in terms of profitability and market share. The study attributed this to greater operational flexibility, better access to capital, and stronger brand positioning in the global market. Public pharmaceutical companies, on the other hand, face challenges in terms of bureaucratic inefficiencies and are often limited by government-imposed price regulations. According to Bansal and Kaur (2016), Indian pharmaceutical companies have generally shown strong profitability due to the significant export market, particularly in generics and active pharmaceutical ingredients (APIs). The study emphasized that companies with diversified portfolios across both domestic and international markets have outperformed their peers in profitability measures. According to Sharma and Singh (2017), government price controls on essential medicines have impacted the profitability of pharmaceutical companies, particularly in the domestic market. However, companies with significant international presence have been able to mitigate this issue through global pricing strategies. The key drivers of growth include advancements in generics production, government policies, and the rise of healthcare demand (Sharma & Thakur, 2018).

Several studies have focused on the financial performance of pharmaceutical companies, using profitability ratios such as Return on Assets (ROA), Return on Equity (ROE), and Gross Profit Margin (GPM). Verma & Chawla(2018) Moreover, the introduction of the Goods and Services Tax (GST) has had mixed effects on pharmaceutical profitability. This study found that the increase in tax burden on certain pharmaceutical products has increased operational costs for some companies.

Gupta and Suri (2019) explored the financial ratios of leading pharmaceutical companies like Cipla, Dr. Reddy's Laboratories, and Sun Pharmaceuticals, comparing them to their international counterparts. Their findings suggested that Indian companies had a competitive advantage in terms of cost efficiency but faced challenges in scaling profit margins due to regulatory issues and pricing pressures in the domestic market. The Indian pharmaceutical sector is heavily influenced by government regulations, particularly the National Pharmaceutical Pricing Authority (NPPA) and policies like the Drugs Price Control Order (DPCO).

The globalization of the pharmaceutical industry has significantly impacted the profitability of Indian companies. India is a major exporter of generic drugs, which has contributed to the profitability of companies such as Dr Reddy's Laboratories, Lupin, and Cipla. According to Reddy and Rao (2020), the ability of Indian pharmaceutical companies to capture global market share, particularly in the U.S. and Europe, has been a key driver of profitability. These companies can leverage cost advantages in manufacturing, particularly in API production, to remain competitive. The research by Kumar et al. (2021) also suggested that Indian companies with a focus on R&D-driven innovation have been able to increase their profit margins, especially in high-value segments like oncology and biologics. Despite strong growth prospects, the Indian pharmaceutical industry faces several challenges that could affect profitability in the future. According to Singh and Jain (2022), rising input costs, intense competition in the generics market, and the increasing influence of multinational corporations pose risks to profit margins. However, there are significant opportunities, including the expansion of the biosimilar market and the rising demand for personalized medicine. Companies that are able to capitalize on these emerging trends are expected to maintain strong profitability in the long term.

Statement of the Problem

With substantial contributions to domestic and foreign markets, India's pharmaceutical industry is essential to the nation's healthcare and economic sectors. As one of the biggest manufacturers of generic medications worldwide, India's pharmaceutical firms deal with several difficulties, such as shifting raw material prices, regulatory demands, and escalating domestic and international competition. Pharmaceutical firms' profitability significantly impacts their sustainability, financial health, and capacity to reinvest in R&D, innovation, and other areas. Financial ratios, including the gross profit ratio, net profit ratio, return on equity (ROE), return on assets (ROA), and earnings per share (EPS) are frequently used to assess profitability. These ratios show how well businesses use their resources and produce profits for their owners. However, thorough studies comparing the profitability of the leading pharmaceutical companies in India are scarce despite the country's substantial expansion. Analyzing how various businesses have performed in terms of profitability and financial efficiency is crucial given the dynamic nature of this sector, where possibilities and obstacles are constantly changing. A combination of market strategy, R&D expenditures, operational effectiveness, and regulatory considerations influence the profitability of Indian pharmaceutical companies. Comparative research reveals notable differences between businesses, highlighting the significance of strategic management and flexibility in a changing domestic and international environment. So, it is necessary to study benchmarking and sophisticated analysis from time to time to get a deeper understanding of profitability trends.

OBJECTIVES:

- To compare the profitability of major pharmaceutical companies in India, including Aurobindo Pharmaceutical, Mankind Pharmaceutical, and Torrent Pharmaceutical, using key profitability ratios.
- To evaluate profitability's stability and growth patterns using standard deviation and compound annual growth rate (CAGR) metrics.
- To identify the profitability of these pharmaceutical companies, providing insights for stakeholders, including investors, management, and policymakers.

Research Methodology:

Data Collection: The study is based on Secondary data collected from various Annual Reports from pharmaceutical companies. Research Articles and Journals Peer-reviewed articles, industry publications, and research papers related to the pharmaceutical sector. And annual reports of selected companies have been taken from 2018 to 2023.

Sample Design: The study has taken into consideration the following three public-sector pharmaceutical companies based on their market capitalization. The top three pharmaceutical companies in India. According to their market capitalization, are:

1. Aurobindo Pharmaceutical
2. Mankind Pharmaceutical,
3. Torrent Pharmaceutical

These pharmaceutical companies are also known for their performance, customer satisfaction, financial performance, and market capitalization.

Analysis Of Profitability

The profitability ratio is a tool used to assess a company's capacity to turn a profit relative to its costs and other income-generating expenses over a given period. This ratio represents the company's outcome. Profitability is a measure of a company's ultimate success or its profitability. It also shows how well the owner's money has been invested in the business.

The ratios provided can be used to calculate profitability.

- Gross Profit Ratio
- Net Profit Ratio
- Return on Capital Employed Ratio
- Return on Assets Ratio
- Return on Equity Ratio
- Earnings Per Share Ratio

1. **Gross Profit Ratio:** The gross profit margin shows the percentage of revenue that exceeds the cost of goods sold (COGS). It measures how efficiently a company is producing its products or services.

Formula:

$$\text{Gross Profit Ratio} = \text{Gross Profit/Net Revenue of Operations} \times 100$$

Table 1: Gross Profit Ratio of the Selected Pharmaceutical Companies(In Percentage)

Year	Aurobindo pharma. Company	Mankind pharma. Company	Torrent Pharma. Company
2018-19	16.20	12.16	16.22
2019-20	17.92	26.38	18.10
2020-21	26.49	26.04	21.17
2021-22	14.50	24.76	21.74
2022-23	12.62	19.22	20.49
Mean	17.55	21.71	19.54
SD	5.37	6.07	2.32
CV	30.62	27.94	11.86
CAGR	-0.05	0.09	0.05

Source: - *Compiled and Computed from various Annual reports of selected Pharmaceutical Companies.*

Interpretation:

The table presents the Gross Profit Ratio (GPR) data for three pharmaceutical companies—Aurobindo Pharma, Mankind Pharma, and Torrent Pharma—over five years, from 2018-2019 to 2022-2023. The analysis of this data involves the calculation of the mean, standard deviation (SD), coefficient of variation (CV), and compound annual growth rate (CAGR), which provide insights into the performance, consistency, and growth trends of each company.

Aurobindo Pharma's GPR exhibited significant variability over the five years, ranging from a low of 12.62 in 2022-2023 to a high of 26.49 in 2020-2021. The mean GPR for Aurobindo Pharma is 17.546, reflecting an average profitability ratio over the period. The standard deviation of 5.37 suggests that Aurobindo Pharma experienced substantial fluctuations in its gross profit ratio, with a relatively high degree of variability. The coefficient of variation (CV) for Aurobindo Pharma is 30.62%, which indicates a high level of risk or inconsistency in its profitability during the given period. This high CV means that Aurobindo Pharma's profitability is less predictable and shows more volatility compared to its peers. The compound annual growth rate (CAGR) of -4.87% (After converting into percentage) for Aurobindo Pharma indicates a negative growth trend in its gross profit ratio over the five years, suggesting that the company's profitability has been on the decline on an annualized basis.

Mankind Pharma's GPR also shows variability, though it appears more stable than Aurobindo Pharma. The GPR ranged from a low of 12.16 in 2018-2019 to a peak of 26.38 in 2019-2020, reflecting a higher overall mean GPR of 21.71. The standard deviation for Mankind Pharma is 6.07, which is higher than Aurobindo's, indicating that although the company's profitability fluctuated, it did so to a more significant extent. The coefficient of variation (CV) of 27.95% suggests moderate variability in its profitability ratio, signalling that Mankind Pharma's profit performance was somewhat inconsistent but not as volatile as Aurobindo's. Mankind Pharma experienced a positive CAGR of 9.59%, which indicates a healthy growth trajectory in its profitability over the observed period. This positive growth rate means that, despite fluctuations, Mankind Pharma has generally improved its gross profit ratio year over year.

Torrent Pharma demonstrated a more stable gross profit ratio, with figures ranging from 16.22 in 2018-2019 to 21.74 in 2021-2022. The mean GPR for Torrent Pharma is 19.54, which lies between that of Aurobindo Pharma and Mankind Pharma. Torrent Pharma exhibited the lowest standard deviation of the three companies, at 2.32, indicating a relatively stable profitability ratio with minimal fluctuations. The coefficient of variation (CV) for Torrent Pharma is 11.86%, the lowest among the three companies, reflecting a lower degree of volatility and greater predictability in its profit performance. The positive CAGR of 4.78% indicates steady growth in its gross profit ratio, although at a slower pace compared to Mankind Pharma. This suggests that Torrent Pharma has managed to maintain a consistent and gradual increase in profitability over the past five years.

2. **Net Profit Ratio:** A company's profitability or financial success after taxes is gauged by its net profit ratio, sometimes called its net profit margin. It facilitates comparing the organization's earnings to the total capital contributed to the enterprise. The net profit ratio shows what's left over after deducting manufacturing costs, finance, and administrative expenses from sales and income taxes.

Formula:

Net Profit Ratio = (Net Profit / Net Sales) x 100

Table 2: Net Profit Ratio of the Selected Pharmaceutical Companies (In Percentage)

Year	Aurobindo pharma. Company	Mankind pharma. Company	Torrent Pharma. Company
2018-19	12.48	17.23	12.93
2019-20	14.12	19.98	15.21
2020-21	19.67	19.61	17.63
2021-22	12.88	18.39	14.7
2022-23	9.61	15.36	13.66
Mean	13.75	18.11	14.83
SD	3.70	1.88	1.80
CV	26.89	10.39	12.15
CAGR	-0.05	-0.02	0.01

Source: *- Compiled and computed from various Annual reports of selected Pharmaceutical Companies.*

Interpretation: The table provides data on the Net Profit Ratio (NPR) of three leading pharmaceutical companies—Aurobindo Pharma, Mankind Pharma, and Torrent Pharma—for the five years from 2018-19 to 2022-23. The net profit ratio is a crucial indicator of a company's financial health, reflecting its ability to convert revenue into actual profit after accounting for all expenses, taxes, and interest. The mean, standard deviation (SD), coefficient of variation (CV), and compound annual growth rate (CAGR) have been computed to provide insights into the companies' profitability, stability, and overall financial performance trends.

Aurobindo Pharma's net profit ratio fluctuated significantly over the given period. In 2018-19, the NPR was 12.48, and it reached its peak of 19.67 in 2020-21. After that, it declined to 9.61 in the year 2022-23. The mean NPR over the five years stands at 13.752, indicating a moderate profitability level compared to the other two companies. The standard deviation (3.698) suggests that Aurobindo Pharma's net profit ratio has undergone substantial fluctuations over time. The coefficient of variation (CV) is 26.89%, the highest among the three companies, suggesting significant inconsistency and unpredictability in net profit generation. This high variability could be due to multiple factors, such as fluctuating production costs, changing market demand, or regulatory challenges affecting its profitability.

Furthermore, Aurobindo Pharma's CAGR is -5.09%, indicating a consistent decline in the net profit ratio over the five years. The negative CAGR is concerning, as it reflects a downward trend in profitability, suggesting challenges such as increasing operational costs, pricing pressure, or inefficiencies in managing expenses. The company may need strategic interventions to reverse this declining profitability trend.

Mankind Pharma demonstrates a relatively strong and stable financial performance in terms of net profit ratio. The company's NPR ranged from 17.23 in 2018-19 to a peak of 19.98 in 2019-20, but then slightly declined to 15.36 in 2022-23. The mean NPR over five years stands at 18.114, which is the highest among the three companies, highlighting its strong profitability. In terms of volatility, Mankind Pharma has the lowest standard deviation (1.88), which means its net profit ratio has been relatively consistent over the years. The coefficient of variation (CV) is 10.39%, indicating minimal fluctuations and strong stability in profit generation. A lower CV suggests that the company has managed its financial operations efficiently, maintaining steady earnings and cost control strategies. However, the company's CAGR (-2.27%) suggests a slight decline in net profitability over the five-year period, although not as steep as Aurobindo Pharma's. The negative CAGR might indicate slight margin pressures or increased operational costs in recent years. Nevertheless, Mankind Pharma still maintains the most substantial profitability among the three companies, which showcases its resilience in financial management.

Torrent Pharma exhibited moderate but stable performance in terms of net profit ratio. Its NPR ranged from 12.93 in 2018-19 to 17.63 in 2020-21 before declining slightly to 13.66 in 2022-23. The mean NPR of 14.83 suggests that its average profitability is higher than Aurobindo Pharma but lower than Mankind. With a standard deviation of 1.80, Torrent Pharma demonstrated low volatility in the net profit ratio, indicating consistent profitability. The coefficient of variation (CV) of 12.15% further reinforces its stable financial performance compared to Aurobindo Pharma. Its ability to maintain financial consistency makes it a reliable performer in the industry. The CAGR for Torrent Pharma is positive at 1.10%, making it the only company among the three to register growth in net profit ratio over the five years. This indicates that despite periodic fluctuations, the company has maintained an overall upward trajectory in terms of net profitability.

3. **Return on Capital Employed Ratio:** A long-term profitability measure called return on capital employed (ROCE) is used to evaluate a company's efficiency and profitability.

Formula:

ROCE = (EBIT / Capital Employed) x 100

Table 3: Return on Capital Employed Ratio of the Selected Pharmaceutical Companies(In Percentage)

Year	Aurobindo pharma. Company	Mankind pharma. Company	Torrent Pharma. Company
2018-19	17.23	28.26	10.46
2019-20	18.04	34.04	13.14
2020-21	25.51	29.99	14.88
2021-22	9.40	29.06	16.79
2022-23	8.84	19.65	16.66
Mean	15.80	28.20	14.39
SD	6.90	5.27	2.65
CV	43.69	18.69	18.44
CAGR	-0.12	-0.07	0.10

Source*: - Compiled and Compiled from various Annual reports of selected Pharmaceutical Companies.*

Interpretation: The table presents the ROCE ratio of three pharmaceutical companies—Aurobindo Pharma, Mankind Pharma, and Torrent Pharma—over five years (2018-19 to 2022-23). To evaluate their performance, we analyze the mean ROCE, standard deviation (SD), coefficient of variation (CV), and compound annual growth rate (CAGR) to understand the profitability trends, stability, and efficiency of capital utilization for each company.

Aurobindo Pharma's ROCE has shown significant fluctuations, starting at 17.23% in 2018-19, reaching a peak of 25.51% in 2020-21, and then declining sharply to 8.84% in 2022-23. The mean ROCE over the five years is 15.80%, indicating a moderate level of capital efficiency. However, the standard deviation (6.91%) and coefficient of variation (CV: 43.70%) show that Aurobindo Pharma has experienced the highest volatility among the three companies. This suggests that the company's ability to generate returns on capital has been inconsistent and unpredictable. The sharp decline after 2020-21 may be attributed to operational inefficiencies, increased financial costs, or reduced profit margins affecting overall capital efficiency. Furthermore, Aurobindo Pharma's CAGR (-12.49%) over the five years indicates a continuous decline in ROCE. The negative CAGR suggests that the company is facing difficulties in maintaining efficient capital utilization, possibly due to rising expenses, higher borrowing costs, or declining revenue growth. To reverse this downward trend, Aurobindo Pharma needs to optimize its financial and operational strategies, reduce inefficiencies, and improve cost management.

Mankind Pharma has demonstrated the strongest and most stable capital efficiency among the three companies. The company's ROCE started at 28.26% in 2018-19, peaked at 34.04% in 2019-20, and ended at 19.65% in 2022-23. Despite the slight decline in recent years, Mankind Pharma maintains a high mean ROCE of 28.2%, the best among the three companies. The standard deviation (5.27%) and CV (18.69%) indicate that Mankind Pharma's ROCE has shown moderate fluctuations but remains relatively stable compared to Aurobindo Pharma. A lower coefficient of variation signifies better predictability and strong financial control over capital utilization. This suggests that the company has been able to consistently generate strong returns on its invested capital, making it a highly efficient player in the pharmaceutical industry. However, the negative CAGR (-7.01%) suggests that Mankind Pharma's ROCE has been gradually decreasing over time. While it still leads in capital efficiency, the declining trend raises concerns about potential market pressures, increased operational costs, or changes in investment strategy. Mankind Pharma may need to focus on maintaining its strong capital efficiency by optimizing investments, improving profit margins, and controlling capital expenditures to sustain its leading position.

Torrent Pharma's ROCE has shown steady improvement over the five years, indicating efficient capital utilization and growth. The ROCE started at 10.46% in 2018-19, increased gradually, peaking at 16.79% in 2021-22, and slightly declined to 16.66% in 2022-23. The mean ROCE is 14.386%, slightly lower than Aurobindo Pharma but much more stable. The standard deviation (2.65%) and CV (18.44%) indicate that Torrent Pharma has the lowest fluctuations and highest consistency in its ROCE compared to the other two companies. A low CV means that the company's financial performance is predictable, which is a positive sign for investors and stakeholders who seek stability. Importantly, Torrent Pharma is the only company among the three with a positive CAGR of 9.76%, indicating continuous long-term growth in capital efficiency. Unlike Aurobindo and Mankind Pharma, which exhibited negative growth trends, Torrent Pharma's ability to steadily enhance its ROCE over time suggests strong financial and operational management. This consistent improvement makes it a reliable and steadily growing pharmaceutical company.

4. **Return on Assets Ratio:** A financial indicator that assesses how well a business uses its assets to produce a profit is the return on assets or ROA ratio. It is computed by splitting the business's net income by its assets' value. ROA explains how healthy management is turning the company's resources into profits.

Formula:

ROA=Net Income/Total Assets x 100

Table 4: Return on Assets Ratio of the Selected Pharmaceutical Companies(In Percentage)

Year	Aurobindo pharma. Company	Mankind pharma. Company	Torrent Pharma. Company
2018-19	8.43	14.87	6.19
2019-20	9.58	21.14	7.87
2020-21	13.42	18.44	9.67
2021-22	6.73	15.87	8.88
2022-23	4.93	13.32	8.16
Mean	8.61	16.73	8.15
SD	3.21	3.09	1.30
CV	37.23	18.47	15.94
CAGR	-0.10	-0.02	0.05

Source:*- Compiled and Computed from various Annual reports of selected Pharmaceutical Companies.*

Interpretation: The table presents the ROA ratios of Aurobindo Pharma, Mankind Pharma, and Torrent Pharma for the five years from 2018-19 to 2022-23. To assess their financial performance, we analyze their mean ROA, standard deviation (SD), coefficient of variation (CV), and compound annual growth rate (CAGR) to understand profitability trends, stability, and efficiency of asset utilization.

Aurobindo Pharma's ROA has declined over the last five years, indicating a weakening ability to generate profits from its asset base. The ROA started at 8.43% in 2018-19, peaked at 13.42% in 2020-21, but then declined sharply to 4.93% in 2022-23. The mean ROA over five years is 8.618%, reflecting a moderate level of asset efficiency. The standard deviation (3.21%) and coefficient of variation (CV: 37.23%) indicate that Aurobindo Pharma's ROA has experienced the highest fluctuations among the three companies. The high CV suggests inconsistent performance in asset utilization, possibly due to fluctuating operating costs, regulatory challenges, or inefficient asset management. The most concerning factor is the CAGR of -10.17%, which confirms a long-term declining trend in ROA. This consistent deterioration suggests increasing capital intensity, lower profit margins, or rising operational expenses. To improve performance, Aurobindo Pharma must optimize its asset utilization by improving efficiency in production processes, reducing financial liabilities, and enhancing operational productivity.

Mankind Pharma has demonstrated the highest and most stable ROA among the three companies, highlighting strong profitability and efficient asset management. The company's ROA started at 14.87% in 2018-19, peaked at 21.14% in 2019-20, and then slightly declined to 13.32% in 2022-23. Despite the drop, it maintains a five-year mean ROA of 16.73%, which is significantly higher than the other two companies, demonstrating superior financial efficiency. With a standard deviation of 3.09% and CV of 18.47%, Mankind Pharma has demonstrated relative stability in its asset utilization. The lower CV reflects a more consistent financial performance, meaning that the company's profitability relative to its assets does not fluctuate drastically over time. However, the negative CAGR (-2.18%) suggests that the company's asset efficiency has gradually declined over the past five years. While Mankind Pharma maintains a high ROA, the declining growth trend may indicate increasing costs of assets, changing market conditions, or slight inefficiencies in capital allocation. To sustain its lead, Mankind Pharma must focus on maintaining efficient asset turnover, investing in cost-effective expansion strategies, and managing operational costs efficient.

Torrent Pharma exhibited the most stable ROA with a continuous growth trend over the period. The company's ROA increased from 6.19% in 2018-19 to 9.67% in 2020-21, before reaching at 8.16% in 2022-23. The mean ROA of 8.15% places it slightly below Aurobindo Pharma but with much more stability. With a standard deviation of 1.30% and the lowest coefficient of variation (CV: 15.95%), Torrent Pharma has demonstrated the least amount of fluctuation and highest predictability in performance among the three companies. This consistency is beneficial for long-term investors and reflects well-structured asset utilization policies. Additionally, Torrent Pharma has the only positive CAGR of 5.68%, signifying a steady improvement in ROA over time. This upward trajectory indicates better asset utilization, improved profit margins, and sound financial management strategies. Among the three companies, Torrent Pharma is the only one showing consistent growth in profitability relative to its assets, suggesting that its operational efficiency is gradually strengthening over time.

5. **Return on Equity:** This ratio calculates the profitability of the company's equity fund investments. It also gauges how well owner capital has been deployed to produce revenue for the business. A higher ratio indicates that the industry is doing better.

Formula:

ROE = Net Income / Shareholders' Equity x 100

Table 5: Return on Equity Ratio of the Selected Pharmaceutical Companies(In Percentage)

Year	Aurobindo pharma. Company	Mankind pharma. Company	Torrent Pharma. Company
2018-19	13.47	20.56	14.86
2019-20	14.37	26.24	18.32
2020-21	19.55	22.90	18.86
2021-22	8.50	22.00	15.62
2022-23	6.86	16.03	16.28
Mean	12.55	21.546	16.788
SD	5.04	3.72	1.73
CV	40.22	17.28	10.30
CAGR	-0.12	-0.05	0.02

***Source**: - Compiled and Computed from various Annual reports of selected Pharmaceutical Companies.*

Interpretation: The table presents the ROE ratios for Aurobindo Pharma, Mankind Pharma, and Torrent Pharma over five financial years, from 2018-19 to 2022-23. The analysis considers mean ROE, standard deviation (SD), coefficient of variation (CV), and compound annual growth rate (CAGR) to assess profitability trends, consistency, and financial efficiency.

Aurobindo Pharma has shown a significant decline in ROE over the five-year period, suggesting a diminishing capacity to generate profits from its shareholders' investments. The ROE started at 13.47% in 2018-19, peaked at 19.55% in 2020-21, and then sharply fell to 6.86% in 2022-23, marking a worrying trend. The mean ROE over five years is 12.55%, which is the lowest among the three companies, indicating weaker profitability in relation to shareholder equity. The standard deviation of 5.05% and the coefficient of variation (CV: 40.22%) highlight that Aurobindo Pharma has the most volatile and inconsistent ROE trends, making it less predictable for investors.

The CAGR of -12.62% confirms that Aurobindo Pharma's ROE is on a continuous downward trajectory. This steep decline may stem from decreasing net profit margins, rising debt obligations, or inefficient equity deployment. The company needs to adopt strategic cost management, optimize capital structure, and enhance profitability through operational improvements to regain investor confidence.

Mankind Pharma has exhibited the highest and most stable ROE performance among the three companies, indicating strong financial efficiency. The company's ROE began at 20.56% in 2018-19, peaked at 26.24% in 2019-20, and settled at 16.03% in 2022-23. With a mean ROE of 21.55%, Mankind Pharma surpasses its competitors, demonstrating effective utilization of shareholders' funds to generate high returns. The standard deviation (3.72%) and coefficient of variation (CV: 17.28%) indicate moderate fluctuations and relative stability. However, the CAGR (-4.86%) suggests a declining trend in ROE over time. While Mankind Pharma remains the most profitable in terms of equity utilization, the gradual reduction signals potential challenges, such as higher capital expenditures, lower margins, or increased reinvestment of earnings. To sustain its leadership, the company should focus on efficiency improvements, cost-effective expansion strategies, and maintaining healthy profit margins.

Torrent Pharma displays steady and consistent ROE growth, making it a reliable company for investors seeking stable returns. The ROE increased from 14.86% in 2018-19 to 16.28% in 2022-23, reaching a peak of 18.86% in 2020-21. The mean ROE of 16.79% is moderate but higher than Aurobindo Pharma, indicating better efficiency in utilizing shareholder funds. The standard deviation of 1.73% and the lowest coefficient of variation (CV: 10.31%) suggest remarkable stability in ROE trends, making Torrent Pharma the least volatile and most predictable investment option. The CAGR of +1.84% makes Torrent Pharma the only company with a positive growth trend in ROE. This steady improvement indicates strong financial management, efficient capital allocation, and sustained profitability. Among the three, Torrent Pharma stands out for its ability to generate consistent returns while maintaining stability in financial performance.

6. **Earnings Per Share:** A crucial financial indicator that assesses a company's profitability per share is earnings per share (EPS). The Profitability ratio shows how much profit is allocated to each company's share, earnings per share, or EPS. Divided by the total number of outstanding shares of common stock, it is computed as the corporation's net income (net of taxes and preferred shareholder distributions).

Formula:

EPS = (Net Income – Preferred Dividends) / Weighted Average Shares Outstanding

Table 6: Earnings Per Share Ratio of the selected Pharmaceutical Companies(In Rupees)

Year	Aurobindo pharma. Company	Mankind pharma. Company	Torrent Pharma. Company
2018-19	26.11	15.26	44.05
2019-20	31.96	23.92	55.46
2020-21	53.13	27.07	67.24
2021-22	24.83	33.33	58.59
2022-23	21.00	31.16	39.79
Mean	31.41	26.14	53.03
SD	12.76	7.09	11.12
CV	40.65	27.11	20.97
CAGR	-0.04	0.15	-0.02

Source:- Compiled and Computed from various Annual reports of selected Pharmaceutical Companies.

Interpretation: The table displays the EPS ratios for Aurobindo Pharma, Mankind Pharma, and Torrent Pharma from 2018-19 to 2022-23, alongside calculated figures such as mean EPS, standard deviation (SD), coefficient of variation (CV), and compound annual growth rate (CAGR). Through this analysis, we aim to assess the companies' profitability trends, stability in earnings, and overall financial performance.

Aurobindo Pharma has experienced fluctuating EPS over the five years, with a noticeable decline in the most recent years. The EPS started at 26.11 in 2018-19, increased to 53.13 in 2020-21, but then declined to 21.00 in 2022-23. The mean EPS of 31.406 indicates that Aurobindo Pharma has had a moderate average earnings performance over the five years. However, its standard deviation of 12.77 and coefficient of variation (CV) of 40.65% point to high variability in earnings, signalling an unpredictable performance. Such volatility could be attributed to fluctuating sales, varying costs, regulatory changes, or operational inefficiencies.

Additionally, Aurobindo's negative CAGR of -4.26% highlights a long-term declining trend in its earnings, suggesting decreasing profitability and lower returns for shareholders. The decline in EPS may stem from declining sales in key markets, higher input costs, or reduced operational efficiency. The company must focus on stabilizing earnings by controlling costs, enhancing operational processes, and targeting sustainable growth to regain investor confidence.

Mankind Pharma has shown a steady and slightly increasing trend in EPS over the years, with consistent improvement in profitability. The company's EPS began at 15.26 in 2018-19, peaked at 33.33 in 2021-22, and remained solid at 31.16 in 2022-23. With a mean EPS of 26.148, Mankind Pharma has demonstrated strong but moderately lower earnings compared to Torrent Pharma. However, the standard deviation of 7.09 and CV of 27.11% point to less volatility compared to Aurobindo Pharma, indicating more stable performance. The lower CV suggests that Mankind Pharma's earnings have shown a more consistent performance despite occasional variations in growth. Importantly, Mankind Pharma recorded a positive CAGR of +15.35%, reflecting strong sustained growth in profitability. The positive growth trend shows that the company has consistently enhanced its earnings performance, signalling effective business strategies and efficiently managing operational costs and revenue generation. Mankind Pharma is likely to continue increasing its earnings if it sustains its competitive edge and adapts to changing market conditions.

Torrent Pharma exhibits the highest EPS growth among the three companies, signaling a strong and consistent increase in earnings per share over time. The company's EPS rose from 44.05 in 2018-19 to 67.24 in 2020-21 before declining slightly to 39.79 in 2022-23. With a mean EPS of 53.026, Torrent Pharma has shown the highest average EPS performance, indicating superior profitability in relation to shareholding value over the analyzed period. Furthermore, the standard deviation of 11.12 and CV of 20.97% reveal moderate volatility, but overall, the company's earnings have been more stable than Aurobindo's. The CAGR of -2.01%, while negative, indicates only a slight decline in growth, suggesting that Torrent Pharma's earnings growth is stabilizing after several years of rapid increase. This could indicate the company reaching a level of maturation in its market expansion or facing increased competition. Still, Torrent Pharma remains one of the most profitable companies in terms of EPS. Torrent Pharma will likely need to explore ways to sustain its earnings growth through innovation, cost containment, and expansion into new markets to combat any potential future slowdowns.

Key Profitability Metrics Overview

Metric	Company	Mean	CAGR
Gross Profit Ratio	Mankind	Highest	Positive
	Torrent	Moderate	Positive
	Aurobindo	Low	Negative
Net Profit Ratio	Mankind	Highest	Negative
	Torrent	Moderate	Positive
	Aurobindo	Low	Negative
ROCE	Mankind	Highest	Negative
	Aurobindo	Moderate	Negative
	Torrent	Low	Positive
ROA	Mankind	Highest	Negative
	Aurobindo	moderate	Negative
	Torrent	Low	Positive
ROE	Mankind	Highest	Negative
	Torrent	Moderate	Positive
	Aurobindo	Low	Negative
EPS	Torrent	Highest	Negative
	Aurobindo	Moderate	Negative
	Mankind	Low	Positive

Comparative analysis:

Mankind Pharma consistently outperforms its peers in most profitability metrics, including Gross Profit Ratio, Net Profit Ratio, ROCE, ROA, and ROE. Despite some variability, its positive CAGR in critical metrics like EPS and ROCE reflects robust growth and operational efficiency. Stable Performer Torrent Pharmaceutical has historically shown low to moderate profitability (e.g., EPS, ROE) and low variability across most metrics, but it has faced declining trends in recent years. The company must reinvigorate growth and address declining metrics like ROCE and EPS. Challenged Performer Aurobindo Pharmaceutical Aurobindo struggles with declining trends across most metrics, including ROCE, ROA, ROE, and EPS, and shows significant variability, indicating an inconsistent performance. Operational inefficiencies, cost challenges, or declining revenues might contribute to this downward trajectory.

Findings:

- The Gross Profit Ratio (GPR) measures the company's profitability by comparing gross profit with sales. Aurobindo Pharma's GPR declined at a CAGR of -4.87%, indicating a slight reduction in profitability over the 5 years. Torrent Pharma showed a more stable GPR, with a positive CAGR of 4.78%, indicating a slight improvement in profitability over time. Mankind Pharma demonstrated a strong performance in the first few years, but its GPR declined in recent years, with a CAGR of 9.59%. Mankind Pharma has the highest mean GPR at 21.71, showing its overall higher profitability than the others. While maintaining a steady GPR, Torrent Pharma also shows consistent growth, making it an attractive choice in terms of stability.
- Net Profit Ratio (NPR) reflects a company's ability to convert sales into actual profit. Mankind Pharma leads with a mean NPR of 18.11, demonstrating its superior efficiency in managing costs and generating profit from sales. Aurobindo Pharma showed a decline in its NPR over the years, with a CAGR of -5.09%, reflecting challenges in maintaining profitability. Torrent Pharma showed a slight positive growth, with a CAGR of 1.1%. The relatively stable NPR of Torrent Pharma is a positive indicator for investors seeking stability.
- ROCE measures the profitability and efficiency of a company in utilizing its capital. Mankind Pharma leads with a mean ROCE of 28.20, reflecting substantial capital utilization. Aurobindo Pharma's CAGR of -12.49% indicates a significant decline in its ability to generate returns from capital employed. Torrent Pharma showed an improvement in ROCE with a CAGR of 9.76%, suggesting increasing efficiency in utilizing capital. Mankind Pharma has consistently been the leader in capital utilization over the five years.
- ROA evaluates how efficiently a company utilizes its assets to generate profits. Mankind Pharma demonstrated strong efficiency, with a mean ROA of 16.73. While Aurobindo Pharma showed a decline in ROA at a CAGR of -10.17%, Torrent Pharma managed to increase its ROA at 5.68%. This suggests that Torrent Pharma has more effectively converted its assets into profit than Aurobindo Pharma. Mankind Pharma remains a top performer in asset utilization.
- ROE measures the profitability relative to shareholders' equity. Mankind Pharma again leads with the highest mean ROE of 21.55, reflecting strong shareholder returns. Aurobindo Pharma's CAGR of -12.62% indicates a decline in equity returns, while Torrent Pharma showed some positive growth with a CAGR of 1.84%. Mankind Pharma's consistently higher ROE makes it an attractive choice for shareholders.
- EPS shows how much profit a company generates for each outstanding share. Torrent Pharma leads in this category with the highest mean EPS of 53.03, which reflects the company's higher profitability per share. Mankind Pharma also showed good growth, especially with a positive CAGR of 15.35%, indicating strong future growth prospects. Aurobindo Pharma's decline in EPS, with a CAGR of -4.26%, suggests that the company may face challenges in increasing its earnings per share over the years.

Suggestions:

- Mankind Pharma stands out as a leader in most profitability ratios, including the Net Profit Ratio, Return on Capital Employed, and Return on Equity. This makes it an attractive investment option for those seeking high profitability and efficient capital management. However, its recent decline in the Gross Profit Ratio suggests a need for cost control or improvement in operational efficiency.
- Torrent Pharma has shown consistent and stable performance, particularly in gross profit ratio and return on assets. It is a good option for investors looking for stability and gradual growth. The company should maintain and improve its profitability ratios to stay competitive.
- Despite showing some growth in its early years, Aurobindo Pharma has faced a decline across several key profitability ratios, including Net Profit Ratio and Return on Capital Employed. The company must identify the reasons for the decline and explore cost-cutting measures, better asset utilization, or more strategic investments to restore profitability.
- All companies should focus on improving their Gross Profit Ratio and Net Profit Ratio in the coming years. Given the pharmaceutical sector trend, focusing on product innovation and better cost management may help improve margins and sustain profitability.
- Future Outlook The pharmaceutical industry remains competitive, and companies must continue improving efficiency, cost management, and capital utilization to sustain growth. Companies with higher increases in EPS (like Torrent Pharma and Mankind Pharma) may see

continued success if they can maintain their positive trends.

Conclusion

Overall, Mankind Pharma appears to be the strongest performer among the three pharmaceutical companies, exhibiting solid profitability and positive growth trends in several key ratios. Aurobindo Pharma, while still profitable, has faced challenges in recent years, especially in terms of capital efficiency and profit margins. Torrent Pharma has displayed moderate growth, but improvements in key ratios like net profit and EPS will be necessary to remain competitive. The pharmaceutical industry presents growth opportunities, but companies must carefully manage their profitability, asset utilization, and returns to sustain long-term success.

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