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A Sectoral Analysis of BSE-Listed Indian Pharma Companies

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ABSTRACT

Purpose: *Investors, including domestic and international firms, venture capitalists, and financial institutions, rely on research to evaluate investment opportunities in the Indian pharmaceutical sector. Research helps assess factors such as market potential, company performance, R&D capabilities, regulatory environment, and risk-return profiles. Research plays a crucial role in guiding research and development (R&D) investments and priorities within the Indian pharmaceutical industry. By identifying unmet medical needs, emerging therapeutic areas, and technological advancements, research helps companies allocate resources effectively and focus on areas with the highest potential for impact and return on investment. The current research includes analysing financial statements, such as income statements and cash flow statements, to assess the profitability and earnings stability of pharmaceutical firms, and also investigate factors influencing EPS growth, such as revenue trends, cost structures, research and development (R&D) investments, regulatory environments, and market dynamics. Additionally, the study of DPS involves evaluating dividend payout ratios, dividend yield, dividend stability, and factors driving dividend decisions, including company profitability, cash flow generation, capital requirements, and shareholder preferences. Understanding the relationship between EPS and DPS in the Indian pharmaceutical sector provides valuable insights for investors, analysts, and policymakers in assessing the financial health, investment attractiveness, and shareholder value creation of pharmaceutical companies. Pharmaceutical companies listed on the Bombay Stock Exchange were selected for the study. Speculations were tested using ANOVA and T-TEST. The audit revealed that investors can invest in Dr. Reddys Laboratories, Abbott India, and Themis Medicare for their EPS to be maximum and Dr. Reddys Laboratories, Abbott India, and Novartis India for their DPS to be maximum.*

Methodology: *Fifteen BSE-listed pharmaceutical companies are considered for the present research work and analysed by using EPS and DPS.*

Result: *Selected Large, medium, and small Indian pharmaceutical companies listed on the BSE were the subjects of this study's analysis of their EPS and DPS. The websites of Money Control and the BSE provided the majority of the time series data used in the study on two different variables, EPS and DPS. Five years, from 2019 to 2020 to 2022–2023 are included in the analysis of the EPS and DPS. The BSE-listed Indian pharmaceutical businesses' EPS and DPS were examined in this study. Descriptive statistics (mean, standard error, standard deviation, skewness, and kurtosis) were computed for the determined EPS and DPS. An ANOVA test is run on the EPS and DPS data to find the differences between the chosen pharmaceutical businesses listed on the BSE. It is recommended that investors put their money into Abbott India, Themis Medicare, and Dr. Reddys Laboratories in order to maximise their*

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SRINIVAS PUBLICATION

EPS, and Novartis India, Abbott India, and Dr. Reddys Laboratories in order to maximise their DPS.

Originality/Value: *The BSE-listed Indian pharmaceutical businesses' EPS and DPS were examined in this study. Descriptive statistics (mean, standard error, standard deviation, skewness, and kurtosis) were computed for the determined EPS and DPS. Based on the study, the right companies for the investors are recommended.*

Paper Type: Exploratory research.

Keywords: EPS, DPS, Investment attractiveness, Shareholder value creation

1. INTRODUCTION :

The Indian pharmaceutical sector stands as a cornerstone of the nation's economy (Jain, H., Athavale, V. A., & Mishra, A. K. et al. (2022), Girish, S., & Desai, K et al. (2018), Venkata Lakshmi Suneetha M., & P. S. Aithal. et al. (2024), Kumar, V. S., & Suneetha, V. L. et al. (2022) [1-4]), playing a pivotal role in catering to the healthcare needs of its vast population and beyond. Renowned for its prowess in the production of high-quality generic drugs, India has earned the moniker of "Pharmacy of the World." With a history dating back to the early 20th century, the Indian pharmaceutical industry has evolved into a dynamic ecosystem comprising a diverse array of companies, from multinational giants to small-scale enterprises. This sector not only fuels economic growth but also contributes significantly to public health by ensuring the availability of affordable and effective medicines across various therapeutic categories.

At the heart of the Indian pharmaceutical sector lies a robust infrastructure encompassing research and development (R&D) facilities (Kandi, V. S., Kamal, P. V., & Pavan, B. N. L. et al. (2023), Tyagi, S., Nauriyal, D. K., & Gulati, R. et al. (2018), Saranga, H., & Banker, R. D. et al. (2010). [5-7]), manufacturing units, and a well-established distribution network. India's strengths in R&D are underscored by its skilled workforce and a conducive regulatory environment that fosters innovation and investment in drug discovery and development. Additionally, the sector benefits from favorable demographics, with a large pool of scientific talent and a growing market fueled by rising healthcare expenditures and increasing awareness about preventive and curative healthcare measures. These factors have propelled India to the forefront of pharmaceutical innovation, with the country emerging as a global hub for drug research, formulation development, and clinical trials.

Despite its achievements, the Indian pharmaceutical sector faces a myriad of challenges, including regulatory complexities, intellectual property rights issues, and pricing pressures. Striking a balance between innovation and affordability remains a constant endeavour, with policymakers, and industry stakeholders (Lehn, K., & Makhija, A. K. et al. (1996), Banerjee, A. et al. (2000), Biddle, G. C., Bowen, R. M., & Wallace, J. S. et al. (1997). [8-10]), and healthcare advocates navigating the intricate dynamics of access, equity, and sustainability. Nevertheless, with its resilience, adaptability, and commitment to excellence, the Indian pharmaceutical sector continues to chart a course toward greater heights, poised to make enduring contributions to healthcare delivery, economic prosperity, and societal well-being on both domestic and international fronts.

In the context of the Indian pharmaceutical sector, understanding the dynamics of earnings per share (EPS) and dividends per share (DPS) is crucial for investors, analysts, and policymakers alike (Velankar, N., Chandani, A., & Ahuja, A. K. et al. (2017), Kumar, P. et al. (2017), Sharma, S. et al. (2011), Pushpa Bhatt, P., & Sumangala, J. K. et al. (2012) [13-16]). EPS serves as a key financial metric that reflects a company's profitability on a per-share basis, providing insights into its ability to generate earnings for shareholders (Sandhar, S., Verma, S., & Nim, D. et al. (2014), Shil, N. C. et al. (2009), Sundaram, A. K., & Inkpen, A. C. et al. (2004) [17-19]). In the pharmaceutical industry, factors influencing EPS include revenue growth, cost structures, research and development (R&D) investments, regulatory approvals, and market competition. Companies with consistent EPS growth demonstrate operational efficiency, innovation prowess, and effective management of resources, thereby enhancing shareholder value and investor confidence.

The ratio of a company's earnings after taxes for any given fiscal year, following the payment of preference share dividends, is referred to as earnings per share. After the corporation pays dividends to its preferred shareholders, the net earnings go exclusively to the equity shareholders. The importance of these ratios flows from the way that the higher the profit per share, in addition, is the scope for a

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS
PUBLICATION

higher rate of dividend and also of reserved for the earnings, to develop the internal strength of the organisation (Chakraborty, S. A et al. (2020), Kaur, M., & Narang, S. et al. (2009), Ramana, D. V. et al. (2005) [20-22]).

The amount of profit left over after all costs are covered is known as the dividend, and it is given to shareholders in exchange for their risk-taking and speculation in the company. It has an effect on the market price of the share in the business sector. DPS displays the amount of dividends that the company has received sense to the actual dividend paid out per share. The shareholders own the earnings after taxes, but the income they really receive is the portion of earnings that is dispersed and paid out as a cash dividend.

Similarly, dividends per share (DPS) play a significant role in assessing the financial performance and shareholder returns within the Indian pharmaceutical sector. DPS represents the portion of earnings distributed to shareholders as cash dividends on a per-share basis. Pharmaceutical companies with stable cash flows, strong profitability, and prudent dividend policies (Naqiyah, N., Pengestuti, I.D., & Mahfudz, M.A et al. (2017), Bollempalli, Venkata Phani and Bhattacharyya, Asish K.et al. (2000), Anderson, K., & Brooks, C. et al. (2006), Reddy, N.R., & Rajesh, M.J. et al. (2008) [23-26]) typically offer attractive dividend yields, thereby attracting income-seeking investors. Moreover, the sustainability and growth of DPS depend on various factors, including company profitability, cash flow generation, capital allocation priorities, and future growth prospects. Understanding the relationship between EPS and DPS provides valuable insights into the financial health, dividend sustainability, and long-term shareholder value creation of pharmaceutical companies operating in the Indian market (Rogerson, W.P. et al. (1997), Sharma, A., & Kumar, S. et al. (2010), Kurmi, M. K. et al. (2013), Hasani, S. M., & Fathi, Z. et al. (2012) [27-30]).

Based on the market capitalization, the BSE-listed pharma companies are divided into Small, Medium, and Large.

The companies selected for this study as per the segregation are

Small – Novartis India, Sigachi Ind, TTK Health Care, Themis Medicare, Amrutanjan Heal.

Medium – Zydus Life, Aurobindo Pharm, Lupin, Alkem Lab, Abbott India.

Large – Sun Pharma, Cipla, Divis Labs, Dr Reddys Labs, Mankind Pharma.

2. REVIEW OF LITERATURE :

Jain, H., Athavale, V. A., & Mishra, A. K. (2022) [1] has discovered a few key business parameters that impact a company's dividend policy, including firm size, current ratio, quick ratio, earnings per share, and dividend per share. Correlation matrices, panel data analysis, and the Housman test have all been used to study the factors affecting dividend policy. The correlation matrix's results showed that there is no discernible relationship between DPR and firm size, CR, or QR. Pooled ordinary least square model results show that DPR is independent of firm size, EPS, DPS, CR, and QR. The firm size, EPS, DPS, CR, and QR had negligible effects on DPR, according to the results of the random effect model.

Girish, S., & Desai, K. (2018) [2] demonstrate how both internal and external variables can affect a stock's price movement. A number of internal and company-specific factors, including book value per share (BVPS), dividends per share (DPS), earnings per share (EPS), price to book value (P/BV), closing market price per share (MPPS), and book value per share (DPS), influence the stock price. The current study examined the effects of the stock price on a sample of 10 Nifty Pharma Index businesses listed on the NSE India between 2011 and 2017, including price to book value, dividend per share, earnings per share, closing market price per share, and book value per share. The combined findings show that BVPS, DPS, and EPS all have a statistically significant favourable impact on MPPS.

Venkata Lakshmi Suneetha, M. & Aithal, P. S. (2023) [3] in the study, two adjustments were made to the associated population and two to the economic benefit computation. Companies involved in real estate and banking that are listed on the Bombay Stock Exchange were chosen for the research. The audit's goal was to ascertain, during a five-year period, the worth of investors in land and bank units listed on the BSE, based on EVA and MVA. We used ANOVA and T-Test to examine the hypotheses. According to the audit, a company such as Legend Engine Corp increased its MVA and EVA during this time.

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

Kumar, V. S., & Suneetha, V. L. (2022) [4] found that there is a decrease in current liabilities and an increase in the current assets over the considered financial years. The suggestions reveal that the company has to strongly focus on reducing working capital strategies that will make the company more profitable. The company has a bright future and can achieve the overall objectives of the company if it concentrates more on its working capital and short-term investments.

Kandi, V. S., Kamal, P. V., & Pavan, B. N. L. (2023) [5] in his study of organisational analysis of the TOP 10 Pharmaceutical Companies serves as its main focus. In light of market capitalization, the organisations' decisions have been made. Market capitalization has been used to pick the companies. While a company's market capitalization is calculated by multiplying its market value by the number of shares, fundamental analysis advises investors on where to place their money. You will genuinely want to have a clear idea about investing in a particular company at the end of our investigation as we do a Company Analysis. The value will be determined by a basic analysis using actual data. The acceptance is that a stock cost over time will reflect the intrinsic value of the organisation.

Tyagi, S., Nauriyal, D. K., & Gulati, R. (2018) [6] examines the characteristics that affect a pharmaceutical company's decision to engage in R&D activities as well as the R&D profile of the Indian drug and pharmaceutical industries. As part of the strategic shift brought about by the Patents (Amendment) Act, 2005, the industry's R&D spending have grown rapidly over the study period. This research offers fresh insights into the factors influencing research and development intensity in the Indian pharmaceutical and drugs sector by utilising actual financial information from the top 91 publicly traded Indian pharmaceutical firms. According to the study's empirical results, there is a positive and significant correlation between R&D intensity and historical innovative production, business size, and cash flow. The number of patents a company has and its international footprint are two other significant factors that determine how intensely it engages in R&D at the firm level.

Saranga, H., & Banker, R. D. (2010). [7] researched the factors influencing the productivity change in the Indian pharmaceutical sector. To quantify the productivity change and break it down into changes in relative and technical efficiency, a non-parametric Data Envelopment based methodology was employed. It was discovered that a segment of creative companies had taken long-term strategic steps anticipating the effects of globalization's competitive dynamics. Because of this, a small number of highly innovative companies with larger R&D expenditures have moved into higher value-added products and industries as a first step towards the development of more complex new drugs. This has pushed the production frontier and increased productivity and technical advancements. Positive developments in productivity and technology have also been brought about in the Indian pharmaceutical business by MNCs, who have larger new product portfolios and superior technical and R&D capacities.

Lehn & Makhija (1996) [8] investigated the size of relationship between various presentation measures and securities exchange returns. The outcomes determined that EVA is the most much related measure with stock returns. In addition, a number of studies demonstrate that EVA's incremental information content tests add significant expounding power to EPS in explaining stock returns. Peterson and Peterson (1996) investigated ordinary and worth added proportions of execution and their relationship with stock returns. Their outcome expresses that customary measures are not experimentally less connected with stock returns than return on esteem added measures.

Banerjee (2000) [9] has done an exact exploration to find the predominance of EVA over other standard monetary execution measures. A comparison of ROI and EVA for a sample of businesses demonstrates that EVA is superior to ROI.

Biddle et al. (1998) [10] achieved in their review that remaining pay based motivators plans show expanded pay. This study shows that chiefs truly do respond to lingering pay based plans. Therefore, EVA and residual income may be effective in motivating managers to create shareholder wealth;

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

however, the question of whether EVA and residual income-based incentives have actually been effective remains open for future research.

DeWet (2005) [11] investigates the consequences of organizations recorded on the JSE Protections Trade South Africa; the outcome does not uphold the alleged predominance of EVA. The outcomes suggest more grounded connections between MVA and income from activities. The concentrate likewise lays out tiny relationship between MVA and EPS, or between MVA and DPS, presuming that the unwavering quality of offer valuations in view of profit or profits should be addressed.

Latha, C. (1999) [12] explains the indication of EVA & assesses it with another standard proportion of corporate execution viz. ROE, ROCE, ROI, EPS, RONW, etc. The specialist utilized the coefficient of assurance to show that the traditional measures don't reproduce the genuine worth of the investors, and accordingly EVA must be considered to gauge the worth of investors' riches. He has furthermore completed the logic of the idea of EVA in the Indian situation with explicit reference to organizations like NIIT, Hindustan Switch, and ITC.

Nandan Velankar, Ankita Chandani & Amanpreet Kaur Ahuja (2019) [13] examined the effects of EPS and DPS on stock price over a nine-year period, from 2006–07 to 2014–15. Scholars have endeavoured to examine the influence of two distinct intrinsic variables, EPS and DPS, on the value of stocks. The unit root test for determining if the time series data was stationary was performed using the Dickey Fuller test. According to the study, EPS and DPS have a big influence on stock price.

Pankaj Kumar (2017) [14] has investigated the effects of price-earnings ratio on earnings per share. the market value of the company's shares. While earnings per share and price-earnings ratio are dependent variables, the market price of the product is the dependent variable used by the researcher. They chose eight auto industry businesses between 2011–12 and 2015–16 based on the Nifty auto indices. The analysis comes to the conclusion that earnings per share is a very good indicator of share market price.

Mr. Sanjeet Sharma (2011) [15] found, for the study period of 1993–1994 to 2008–09, the link between equity shares prices and explanatory variables such as book value per share, dividend per share, earning per share, dividend yield, and dividend payout. According to the findings, MPS is significantly impacted by EPS, DPS, and BV. Since they are the most powerful factors influencing market price, the outcomes are in favour of a generous dividend policy.

Bhatt Pushpa & J. K. Sumangla, (2012) [16] in their study on the price of equity shares. Based on market capitalization, they selected 50 companies during a five-year period, from 2006–07 to 2010–11. The analysis shows that, in the Indian setting, EPS has an effect on share market prices.

3. RESEARCH METHODOLOGY :

3.1 Statement of the Problem:
Monetary worth added and advertise esteem have turned into the most famous instruments for EPS and DPS and serve as key financial metrics that provide insights into the profitability, growth potential, and dividend distribution policies of pharmaceutical companies. However, the unique characteristics of the pharmaceutical sector, including regulatory complexities, patent expirations, and R&D investments, may influence the relevance and interpretation of these metrics. Therefore, the problem statement focuses on elucidating how EPS and DPS are utilized in analysing the financial health, investment attractiveness, and sustainability of pharmaceutical firms in India, considering the sector-specific challenges and opportunities. By addressing this problem, the study aims to provide stakeholders with actionable insights that can inform investment decisions, strategic planning, and policy formulation in the Indian pharmaceutical industry.

4. OBJECTIVES :

(1) To analyse EPS, DPS of selected large, medium, and small sector BSE-listed Indian Pharmaceutical companies.
(2) To rank the selected large, medium, and small sector BSE-listed Indian Pharmaceutical companies.
(3) To suggest regarding the investment decisions.

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

5. METHODOLOGY :

5.1 Sources of Data:

This study depends on the auxiliary information. To examine the pattern and significant expansion of EPS and DPS of the Indian Pharmaceutical sector, required monetary information of test organizations was gathered from Yearly reports of particular organizations; money control site, CMIE Ability, and BSE site.

5.2 Sample Design:

The current study's sample consists of Fifteen leading Pharma companies. Based on the market capitalization, companies are segregated into Small, Medium and Large sized companies.
Small – Novartis India, Sigachi Ind, TTK Health Care, Themis Medicare, Amrutanjan Heal.
Medium – Zydus Life, Aurobindo Pharm, Lupin, Alkem Lab, Abbott India.
Large – Sun Pharma, Cipla, Divis Labs, Dr Reddys Labs, Pharma.

5.3 Hypothesis:

♦ Ho1: There is no substantial difference in the EPS among the selected Pharmaceutical companies of the Industry.
♦ Ho2: There is no difference in the DPS among the selected Pharmaceutical companies of the Industry.

5.4 Research Gap:

While EPS and DPS are widely used indicators of financial performance and shareholder value across industries, the unique characteristics of the pharmaceutical sector, such as drug development timelines, regulatory environments, and patent expirations, may warrant a more tailored approach to analysis.

Implications of the Study:

An in-depth study on the Indian pharmaceutical sector holds significant implications for various stakeholders, including investors, policymakers, industry players, healthcare professionals, and patients. For investors, such a study provides valuable insights into market trends, competitive dynamics, and investment opportunities within the sector. By understanding the financial performance, growth prospects, and risk factors affecting pharmaceutical companies in India, investors can make more informed decisions regarding portfolio allocation and stock selection. Moreover, policymakers can leverage the findings of the study to formulate evidence-based policies and regulations aimed at fostering innovation, ensuring affordability, and enhancing access to healthcare. Additionally, industry players can use the insights gleaned from the study to refine their strategies, optimize resource allocation, and capitalize on emerging opportunities in the Indian pharmaceutical market.

5.5 Tools of Analysis:

Financial Tools: Earnings per share (EPS), Dividend per share (DPS)
Earnings per Share (EPS) is a financial metric that measures the profitability of a company on a per-share basis. It is calculated by dividing the net income attributable to common shareholders by the average number of outstanding shares during a specific period, usually a quarter or a year. EPS is a critical indicator of a company's performance and profitability, providing insights into its ability to generate earnings for each share of common stock.
EPS is widely used by investors, analysts, and stakeholders to evaluate a company's financial health, growth potential, and shareholder value. A higher EPS indicates higher profitability and better performance, while a lower EPS may signal challenges or underperformance. Moreover, EPS can be compared across different companies within the same industry or over time to assess relative performance and trends.
In the context of the Indian pharmaceutical sector, EPS serves as a key metric for assessing the financial strength and profitability of pharmaceutical companies. Factors influencing EPS in the pharmaceutical industry include revenue growth, cost management, research and development (R&D) investments, regulatory approvals, and market competition. Investors and analysts closely monitor EPS trends and forecasts to make informed investment decisions and evaluate the overall health and outlook of pharmaceutical companies in the Indian market.

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

Dividends per Share (DPS) is a financial metric that measures the portion of a company's earnings distributed to each outstanding share of common stock as dividends. It is calculated by dividing the total dividends paid out to common shareholders by the total number of outstanding shares. DPS provides insight into the company's dividend policy and its commitment to returning value to shareholders.

For investors looking to generate income from their investments, DPS is a crucial statistic. Investors seeking dividends are frequently drawn to companies that have a track record of increasing their dividends because they offer a reliable source of income. DPS, however, can change based on a number of variables, including growth prospects, cash flow generation, profitability, and capital allocation priorities of the business. A lower DPS may arise from certain companies' preference to put their earnings into debt reduction or business expansion as opposed to paying dividends.

Within the Indian pharmaceutical industry, Dividend Payment Schemes (DPS) are a reflection of the dividend distribution policies of pharmaceutical companies that are listed on Indian stock exchanges. Pharmaceutical firms' financial soundness, investor friendliness, and overall health are evaluated by analysts and investors based on their dividend policy and DPS patterns. When assessing investment opportunities in the Indian pharmaceutical business, investors take into account a company's dividend payment history, dividend yield, dividend growth rate, and dividend payout ratio.

Mean: When all the values are added up and divided by the total number of numbers, the result is the "mean". The arithmetic mean is the term used to describe this in mathematics and statistics. Measures of central tendency include mean, median, and mode in statistics.

Standard Deviation: A set of data's dispersion from its mean can be measured using the standard deviation. A larger departure in the data is indicated by a higher scattering. To measure the irregularity of a speculative investment, the standard deviation is linked to the annual rate of return. A stable blue-chip stock will have a lower variance than an unpredictable stock, but unpredictable stocks have unique requirements. A wide range indicates that the store's profit margin deviates from the average returns.

Skewness: Characterising a data set's location and variability is a crucial step in many statistical analyses. The skewness and kurtosis of the data are additional characteristics to be considered. The measure of dispersion provides information about the data set's variation. Skewness provides information on the direction of the data set's variance. Skewness, defined as the absence of symmetry, is a measure of symmetry. If a distribution or data set has the same appearance to the left and right of the canter point, it is said to be symmetric.

Kurtosis: According to the Excel help screens, "kurtosis characterises a distribution's relative flatness when compared to the normal distribution." A distribution that is relatively peaked is indicated by positive kurtosis. A distribution that is largely flat is indicated by negative kurtosis. Kurtosis statistics for normal distributions are roughly zero. A positive number suggests the likelihood of a leptokurtic, whereas a negative value suggests the chance of a platykurtic, as the kurtosis statistic moves further away from zero. Values of two standard errors of kurtosis or more most likely deviate significantly from mesokurtic.

Table 1: Descriptive Analysis Formulae

S. No.	ABBREVIATION	VARIABLES	EQUATION
1	EPS	Earnings Per Share	$EPS = \dfrac{Net\ profit\ after\ tax - preferene\ dividend - interest\ on\ debentures}{Number\ of\ Equity\ shares\ outstanding}$
2	DPS	Dividend Per Share	$DPS = \dfrac{Total\ dividend\ paid\ to\ equity\ shareholders}{No\ of\ equity\ shares\ outstanding}$
3	Mean	Mean	$Mean = \dfrac{Sum\ of\ all\ the\ values}{Total\ number\ of\ values}$
4	S.E	Standard Error	$S.E = \dfrac{S.D}{\sqrt{No\ of\ samples}}$

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

5	S. D	Standard Deviation	$S.D = \sqrt{\dfrac{Squared\ Deviations}{Total\ no\ of\ samples}}$
6	Skewness	Skewness	$Skewness = \dfrac{3(Mean - Median)}{S.D}$
7	Kurtosis	Kurtosis	$Kurtosis = \dfrac{1}{n}.\left(\dfrac{Deviation}{S.D}\right)^4$

6. DATA ANALYSIS AND INTERPRETATION :

EPS for selected BSE-listed Indian Pharma companies (Amount in Rs.) is given in Table 2.

Table 2: EPS for selected BSE Listed Indian Pharma companies – Large (March 2019 – March 2023)

PHARMACEUTICAL & DRUGS SECTOR						
S. No.	COMPANY NAME	2023	2022	2021	2020	2019
1	Sun Pharma	7	-0.4	8.92	13.4	3.4
2	Cipla	31.15	36.67	30.61	28.76	23.45
3	Divis Labs	68.11	111.07	73.63	51.71	50.2
4	Dr Reddys Labs	157.37	97.85	131.84	177.23	76.98
5	Mankind Pharma	32	35.78	31.59	25.72	24.28
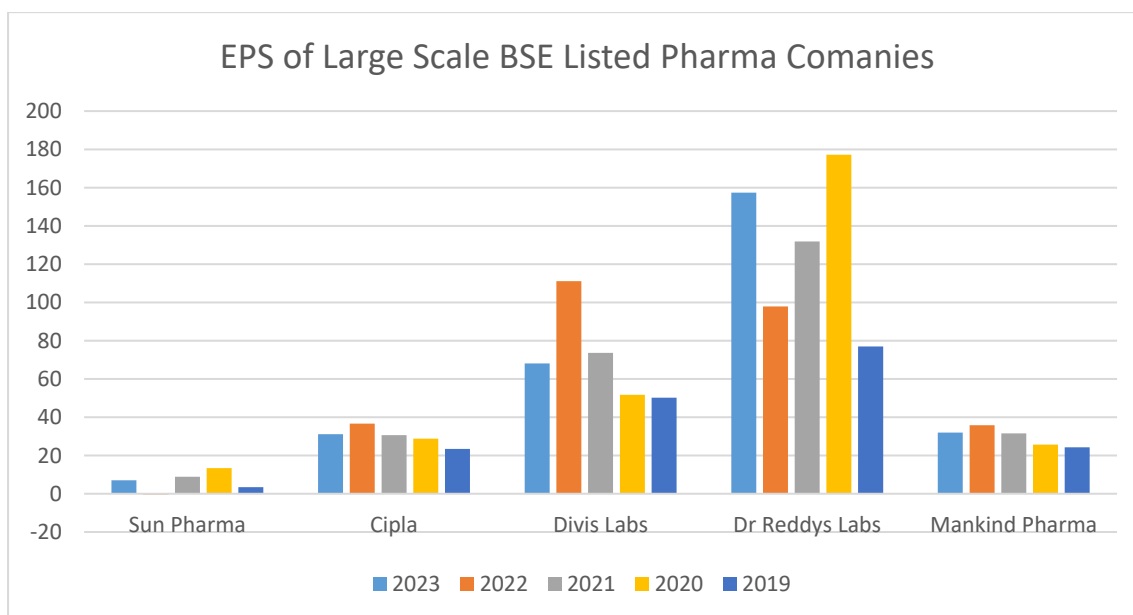
Fig.1: EPS for selected BSE Listed Indian Pharma companies – Large (March 2019 – March 2023)
Source: Calculation is based on Annual reports of Pharma companies and BSE Website

Inference: Table No 2 shows the EPS for selected BSE listed Indian pharmaceutical large sector companies for the period 2019-2023. Dr Reddys Labs returned highest EPS to their shareholders; its value is 177.23 Rs in the year 2020. The least EPS is recorded by Sun pharma in the year 2022. All the companies showing fluctuating trend in the EPS. Divis Labs and Makind pharma are behind the Dr Reddys Labs.

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS
PUBLICATION

Table 3: EPS for selected BSE Listed Indian Pharma companies – Medium (March 2019 – March 2023)

PHARMACEUTICAL & DRUGS SECTOR						
S. No.	COMPANY NAME	2023	2022	2021	2020	2019
1	Zydus Life	15.06	8.38	14.42	13.8	14.51
2	Aurobindo Pharm	21	24.83	53.13	31.96	26.11
3	Lupin	9.35	-4.16	27.77	16.07	34.03
4	Alkem Lab	94.88	128.9	140.93	105.75	66.9
5	Abbott India	446.78	375.86	325.04	279.04	211.93

Source: Calculation is based on Annual reports of Pharma companies and BSE Website
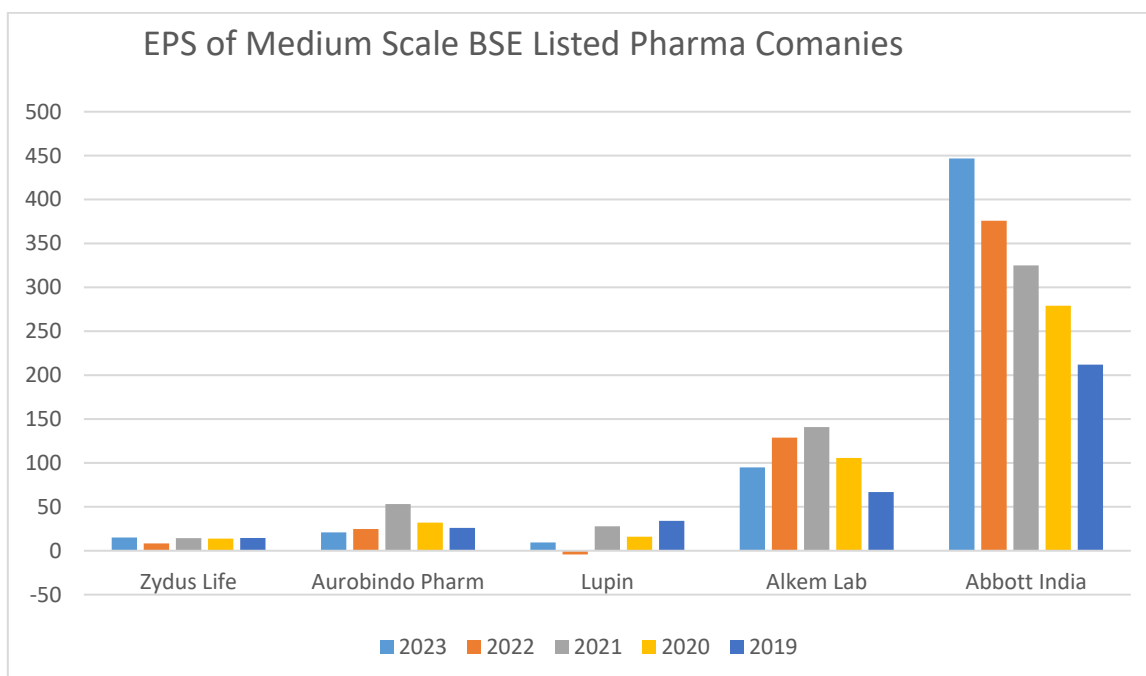
Fig. 2: EPS for selected BSE Listed Indian Pharma companies – Medium (March 2019 – March 2023)

Inference: Table No 3 shows the EPS for selected BSE-listed Indian pharmaceutical medium sector companies for the period 2019-2023. Abbott India returned the highest EPS to their shareholders; its value was 279.04 Rs in the year 2020. The least EPS is recorded by Lupin, in the year 2022. All the companies show fluctuating trends in the EPS. Abbott India has shown a decreasing trend in the EPS for the last 5 years.

Table 4: EPS for selected BSE Listed Indian Pharma companies – Small (March 2019 – March 2023)

PHARMACEUTICAL & DRUGS SECTOR						
S. No.	COMPANY NAME	2023	2022	2021	2020	2019
1	Novartis India	41.86	-1.51	8.46	4.08	20.97
2	Sigachi Ind	2.72	3.3	3.07	3.03	3.88

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

3	TTK Healthcare	31.61	13.1	26.03	8.72	17.25
4	Themis Medicare	61.83	79.22	38.86	26.97	-11.7
5	Amrutanjan Heal	13.63	22.99	20.93	8.58	8.39

Source: Calculation is based on Annual reports of Pharma companies and BSE Website

Fig. 3: EPS for selected BSE Listed Indian Pharma companies – Small (March 2019 – March 2023)

Inference: Table 4 shows the EPS for selected BSE-listed Indian pharmaceutical small sector companies for the period 2019-2023. Themis Medicare returned the highest EPS to its shareholders; its value is 79.22 Rs in the year 2022. The least EPS is recorded by Novartis India, in the year 2022. All the companies show mixed trends in the EPS. Sigachi Ind has shown consistency in the EPS.

Table 5: DPS for selected BSE Listed Indian Pharma companies – Large (March 2019 – March 2023)

PHARMACEUTICAL & DRUGS SECTOR						
S. No.	COMPANY NAME	2023	2022	2021	2020	2019
1	Sun Pharma	11.5	10	7.5	4	2.75
	Cipla	8.5	5	5	4	3
3	Divis Labs	30	30	20	16	16
4	Dr Reddys Labs	40	30	25	25	20
5	Mankind Pharma	8.2	6.6	7.6	5.4	6

Source: Calculation is based on Annual reports of Pharma companies and the BSE Website

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024
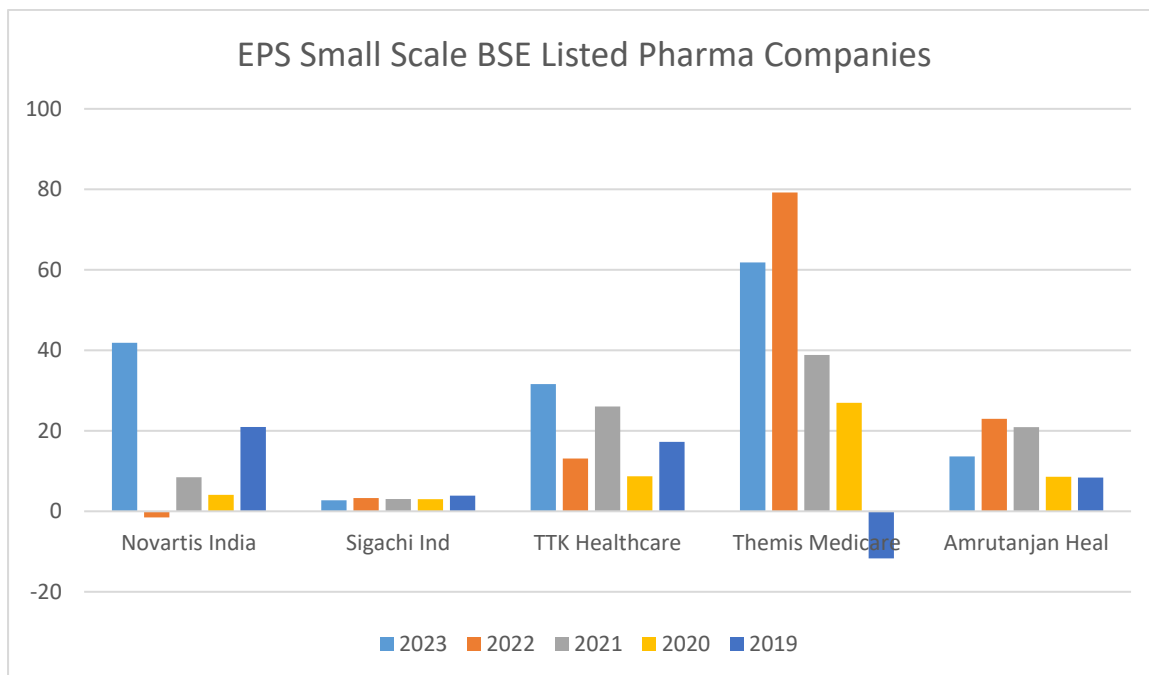
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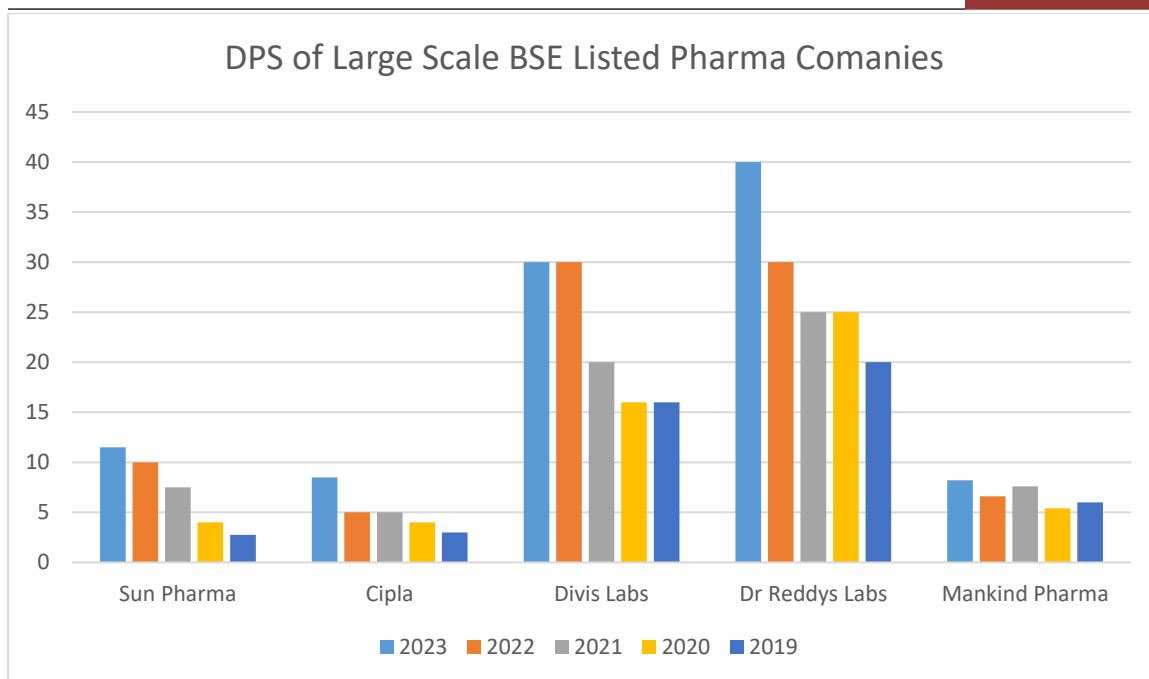
Fig. 4: DPS for selected BSE Listed Indian Pharma companies – Large (March 2019 – March 2023)

Inference: Table No 5 shows the DPS for selected BSE listed Indian pharmaceutical large sector companies for the period 2019-2023. Dr. Reddys Labs returned highest DPS to their shareholders; its value is 40 Rs in the year 2023. The least DPS is recorded by Cipla, in the year 2020. All the companies showing mixed trend in the DPS. Divis labs shown consistency in the DPS

Fig. 5: DPS for selected BSE Listed Indian Pharma companies – Medium (March 2019 – March 2023)

Table 6: DPS for selected BSE Listed Indian Pharma companies – Medium (March 2019 – March 2023)

PHARMACEUTICAL & DRUGS SECTOR

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

S. No.	COMPANY NAME	2023	2022	2021	2020	2019
1	Zydus Life	6	2.5	3.5	3.5	3.5
2	Aurobindo Pharm	3	9	4	3	2.5
3	Lupin	4	4	6.5	6	5
4	Alkem Lab	50	34	30	25	16
5	Abbott India	325	275	275	250	65

Source: Calculation is based on Annual reports of Pharma companies and BSE Website

Inference: Table 6 shows the DPS for selected BSE-listed Indian pharmaceutical medium sector companies for the period 2019-2023. Abbott India returned the highest DPS to their shareholders; its value is 325 Rs in the year 2023. The least DPS is recorded by Lupin in the years 2023 and 2022. All the companies show mixed trends in the DPS. Luin has shown consistency in the DPS
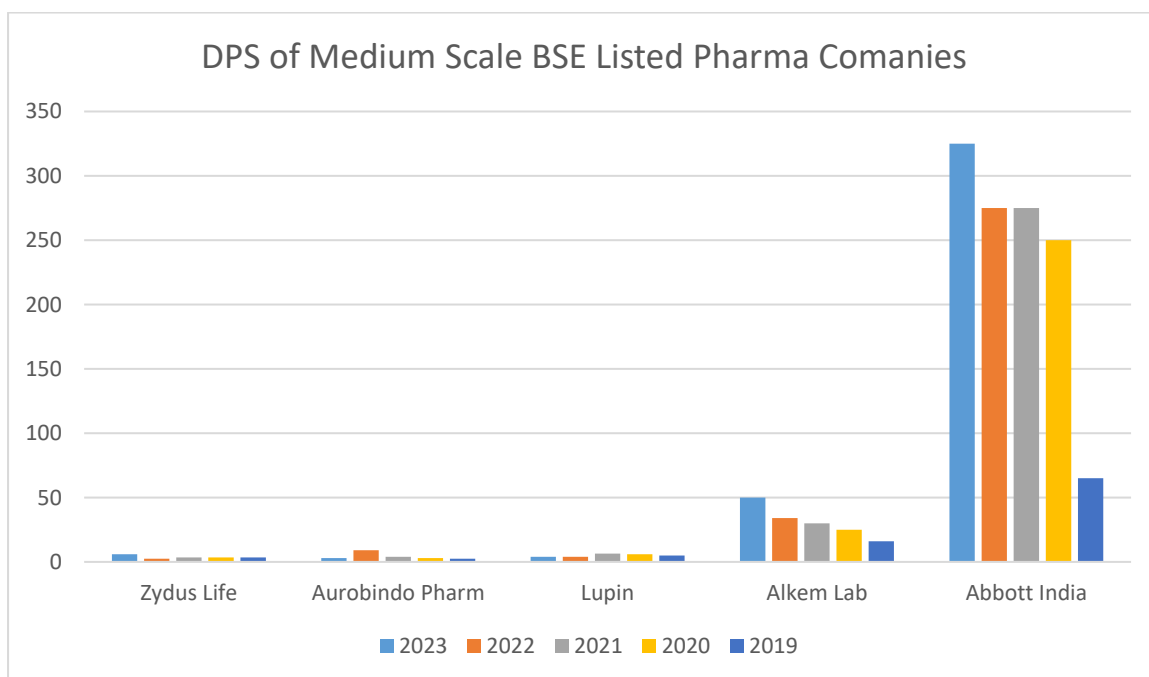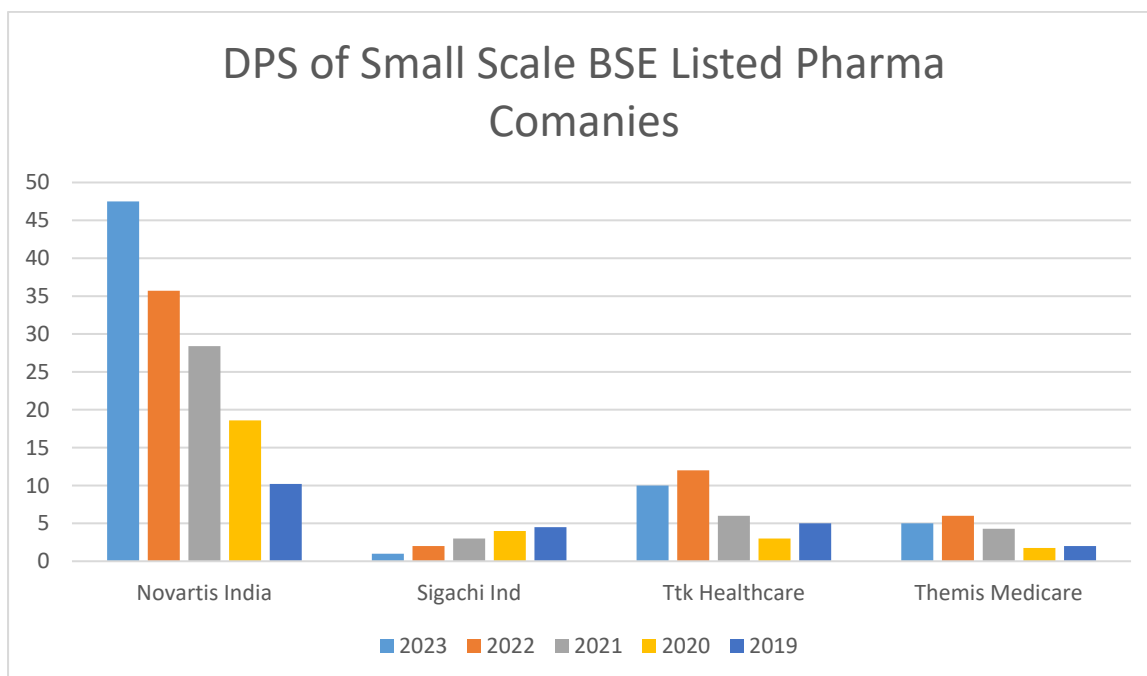

Fig. 6: DPS for selected BSE Listed Indian Pharma companies – Small (March 2019 – March 2023)

Table 7: DPS for selected BSE Listed Indian Pharma companies – Small (March 2019 – March 2023)

PHARMACEUTICAL & DRUGS SECTOR						
S. No.	COMPANY NAME	2023	2022	2021	2020	2019
1	Novartis India	47.5	35.7	28.4	18.6	10.2
2	Sigachi Ind	1	2	3	4	4.5
3	Ttk Healthcare	10	12	6	3	5
4	Themis Medicare	5	6	4.3	1.75	2
5	Amrutanjan Heal	4.6	45	4.2	2.1	2.15

Source: Calculation is based on Annual reports of Pharma companies and BSE Website

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

Inference: Table 7 shows the DPS for selected BSE-listed Indian pharmaceutical small sector companies for the period 2019-2023. Novartis India returned the highest DPS to their shareholders; its value is 47.5 Rs in the year 2023. The least DPS is recorded by Sigachi Ind in the year 2023. All the companies show mixed trends in the DPS. Amrutanjan Heal has shown consistency in the DPS.

6.1 Descriptive Statistics:

Table 8: EPS-PHARMACEUTICAL & DRUGS SECTOR-LARGE

SECTORAL INDICES	MEAN	STANDARD ERROR	STANDARD DEVIATION	SKEWNESS	KURTOSIS
SUN PHARMA	6.464	2.3551	5.266164	-0.42812	-0.01002
CIPLA	30.128	2.127695	4.75767	1.331949	-0.07432
DIVIS LABS	70.944	11.01273	24.6252	1.907479	1.355002
DR REDDYS LABS	128.254	18.45627	41.26947	-1.86432	-0.12271
MANKIND PHARMA	30.982	1.635018	3.656011	1.092995	-0.30297

Inference: Table 8 shows the descriptive statistics for BSE-listed large-scale Indian Pharmaceutical companies. As per the mean returns of various companies, it is found that all the companies have positive mean returns during the study period. Standard deviation of the companies under study shows the fact that only Dr. Reddys Labs have a deviation of more than 40%. Other companies maintained the deviation below 10%. Since most of the skewness values are negative, it indicates that the distribution with an asymmetric tail extends toward more negative values. Since in most of the companies, the kurtosis value is negative it suggests lighter tails and a flatter distribution. Positive kurtosis indicates heavier tails and a more peaked distribution

Table 9: EPS-PHARMACEUTICAL & DRUGS SECTOR-MEDIUM

SECTORAL INDICES	MEAN	STANDARD ERROR	STANDARD DEVIATION	SKEWNESS	KURTOSIS
ZYDUS LIFE	13.234	1.229852	2.750033	4.479102	-2.09061
AUROBINDO PHARM	31.406	5.708832	12.76534	3.161351	1.741192
LUPIN	16.612	6.754236	15.10293	-0.87664	-0.3232
ALKEM LAB	107.472	13.01193	29.09557	-0.67648	-0.3636
ABBOTT INDIA	327.73	40.17275	89.82899	-0.48081	0.07501

Inference: Table 9 shows the descriptive statistics for EPS of BSE-listed medium-scale Indian Pharmaceutical companies. As per the mean returns of various companies, it is found that all the companies have positive mean returns during the study period. Standard deviation of the companies under study shows the fact that only Abbott India has a deviation of more than 90%. Other companies maintained a deviation below 30%. Since most of the skewness values are negative, it indicates that the distribution with an asymmetric tail extends toward more negative values. Since in most of the companies, the kurtosis value is negative it suggests lighter tails and a flatter distribution. Positive kurtosis indicates heavier tails and a more peaked distribution.

Table 10: EPS-PHARMACEUTICAL & DRUGS SECTOR-SMALL

SECTORAL INDICES	MEAN	STANDARD ERROR	STANDARD DEVIATION	SKEWNESS	KURTOSIS
NOVARTIS INDIA	14.772	7.718286	17.25861	0.80315	1.161008

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

SIGACHI IND	3.2	0.193468	0.432608	1.568801	1.017599
TTK HEALTHCARE	19.342	4.191653	9.372821	-1.69633	0.351552
THEMIS MEDICARE	39.036	15.57896	34.83562	0.08483	-0.54829
AMRUTANJAN HEAL	14.904	3.047493	6.814402	-2.78498	0.284582

Inference: Table 10 shows the descriptive statistics for EPS of BSE-listed small-scale Indian Pharmaceutical companies. As per the mean returns of various companies, it is found that all the companies have positive mean returns during the study period. Standard deviation of the companies under study shows the fact that only Novartis India has a deviation of more than 15 %. Other companies maintained a deviation below 10%. Since most of the skewness values are positive, it indicates that the tail of a distribution curve is longer on the right side. This means the outliers of the distribution curve are further out towards the right and closer to the mean on the left. Since in most of the companies, the kurtosis value is positive it suggests heavier tails and a more peaked distribution.

Table 11: DPS-PHARMACEUTICAL & DRUGS SECTOR-LARGE

SECTORAL INDICES	MEAN	STANDARD ERROR	STANDARD DEVIATION	SKEWNESS	KURTOSIS
SUN PHARMA	7.15	1.680029762	3.756660751	-2.368192299	-0.08594124
CIPLA	5.1	0.92736185	2.073644135	2.447944835	1.341588316
DIVIS LABS	22.4	3.18747549	7.127411872	-3.126666253	0.391081872
DR REDDYS LABS	28	3.391164992	7.582875444	1.45557656	1.118079933
MANKIND PHARMA	6.76	0.511468474	1.143678276	-1.750974946	0.172735218

Inference: Table 11 shows the descriptive statistics for DPS of BSE-listed large-scale Indian Pharmaceutical companies. As per the mean returns of various companies, it is found that all the companies have positive mean returns during the study period. Standard deviation of the companies under study shows the fact that the deviation for all the companies is less than 8%. Since most of the skewness values are negative, it indicates that the distribution with an asymmetric tail extends toward more negative values. Since in most of the companies, the kurtosis value is positive it suggests heavier tails and a more peaked distribution.

Table 12: DPS-PHARMACEUTICAL & DRUGS SECTOR-MEDIUM

SECTORAL INDICES	MEAN	STANDARD ERROR	STANDARD DEVIATION	SKEWNESS	KURTOSIS
ZYDUS LIFE	3.8	0.583095189	1.303840481	3.378027682	1.573406117
AUROBINDO PHARM	4.3	1.2	2.683281573	4.157262731	2.018025469
LUPIN	5.1	0.509901951	1.140175425	-2.50739645	0.227697755
ALKEM LAB	31	5.621387729	12.56980509	1.129346259	0.691077451
ABBOTT INDIA	238	44.93328388	100.4738772	3.736004981	-1.814161892

Inference: Table 12 shows the descriptive statistics for DPS of BSE-listed medium-scale Indian Pharmaceutical companies. As per the mean returns of various companies, it is found that all the companies have positive mean returns during the study period. Standard deviation of the companies under study shows the fact that the deviation for the majority of the companies is less than 3%, only for Alkem Lab which is 12.56%. Since most of the skewness values are positive, it indicates that its tail is more pronounced on the right side than it is on the. For all the companies, the kurtosis value is positive it suggests heavier tails and a more peaked distribution.

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

Table 13: DPS-PHARMACEUTICAL & DRUGS SECTOR-SMALL

SECTORAL INDICES	MEAN	STANDARD ERROR	STANDARD DEVIATION	SKEWNESS	KURTOSIS
NOVARTIS INDIA	28.08	6.499492288	14.53330657	-0.830376775	0.16266144
SIGACHI IND	2.9	0.640312424	1.431782106	-1.543723974	-0.306627935
TTK HEALTHCARE	7.2	1.655294536	3.701351105	-1.813096063	0.37863467
THEMIS MEDICARE	3.81	0.835822948	1.868956928	-2.487509373	-0.150964654
AMRUTANJAN HEAL	11.61	8.363229041	18.70074865	4.924923299	2.215105237

Inference: Table 13 shows the descriptive statistics for DPS of BSE-listed medium-scale Indian Pharmaceutical companies. As per the mean returns of various companies, it is found that all the companies have positive mean returns during the study period. Standard deviation of the companies under study shows the fact that the deviation for majority of the companies is less than 15%, only for Amruthanjan Heal it is 18.7%. Since most of the skewness values are negative, it indicates that the distribution with an asymmetric tail extending toward more negative values. Since in most of the companies, the kurtosis value is negative it suggests lighter tails and a flatter distribution. Positive kurtosis indicates heavier tails and a more peaked distribution.

7. HYPOTHESIS TESTING:

7.1 ANOVA Table to test EPS for PHARMACEUTICAL & DRUGS SECTOR: LARGE:

Table 14: ANOVA Test for EPS for PHARMACEUTICAL & DRUGS SECTOR-Large Sector Companies

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio	P-Value	F-Critic
Between Groups	32927.36357	4	8231.840893	14.60649043	4.67639E-05	3.055568276
Within Groups	8453.612725	15	563.5741817	-	-	-
Total	41380.9763	19	41380.9763	-	-	-

Inference: Table 14 shows that p value is much smaller than the level of 5% significance. F value is also beyond the critical value. Hence, we reject the null hypothesis and accept the alternate hypothesis that there is a significant difference in the EPS of selected Pharmaceutical and Drug companies.

7.2 ANOVA Test for EPS for PHARMACEUTICAL & DRUGS SECTOR: MEDIUM:

Table 15: ANOVA Table to test EPS for PHARMACEUTICAL & DRUGS SECTOR-Medium Sector Companies

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio	P-Value	F-Critic
Between Groups	231133.8991	4	57783.47478	45.28985068	3.35117E-08	3.055568276
Within Groups	19137.8887	15	1275.859247	-	-	-
Total	250271.7878	19	-	-	-	-

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

Inference: Table 15 shows that the p value is much smaller than the level of 5% significance. F value is above the critical value. Hence, we reject the null hypothesis and accept the alternate hypothesis that there is significant difference in the EPS of selected Pharmaceutical and Drugs companies.

7.3 ANOVA Test FOR EPS for PHARMACEUTICAL & DRUGS SECTOR: SMALL:

Table 16: ANOVA Table to test EPS for PHARMACEUTICAL & DRUGS SECTOR-Small Sector Companies

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio	P-Value	F-Critic
Between Groups	2092.37853	4	523.0946325	1.625760324	0.219402464	3.055568276
Within Groups	4826.30765	15	321.7538433	-	-	-
Total	6918.68618	19	-	-	-	-

Inference: Table 16 shows that the p-value is much smaller than the level of 5% significance. F value is also less the critical value. Hence, we reject the accept the null hypothesis and reject the alternate hypothesis that there is NO significant difference in the **EPS of** selected Pharmaceutical and Drugs companies.

7.4 ANOVA Table to test DPS for PHARMACEUTICAL & DRUGS SECTOR: LARGE:

Table 17: ANOVA Test for DPS for PHARMACEUTICAL & DRUGS SECTOR-Large Sector Companies

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio	P-Value	F-Critic
Between Groups	1908.184375	3	636.0614583	20.07888593	1.13325E-05	3.238871517
Within Groups	506.85	16	31.678125	-	-	-
Total	2415.034375	19	-	-	-	-

Inference: Table 17 shows that the p-value is much smaller than the level of 5% significance. F value is also beyond the critical value. Hence, we reject the null hypothesis and accept the alternate hypothesis that there is a significant difference in DPS of selected Pharmaceutical and Drugs companies.

7.5 ANOVA Test for EPS for PHARMACEUTICAL & DRUGS SECTOR: MEDIUM:

Table 18: ANOVA Table to test DPS for PHARMACEUTICAL & DRUGS SECTOR-Medium Sector Companies

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio	P-Value	F-Critic
Between Groups	2657.65	3	885.8833333	21.0673801	8.38689E-06	3.238871517
Within Groups	672.8	16	42.05			
Total	3330.45	19				

Inference: Table 18 shows that the value is much smaller than the level of 5% significance. F value is above the critical value. Hence, we reject the null hypothesis and accept the alternate hypothesis that there is a significant difference in the DPS of selected Pharmaceutical and Drug companies.

7.6 ANOVA Test FOR EPS for PHARMACEUTICAL & DRUGS SECTOR: SMALL:

International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

SRINIVAS PUBLICATION

Table 19: ANOVA Table to test DPS for PHARMACEUTICAL & DRUGS SECTOR-Small Sector Companies

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio	P-Value	F-Critic
Between Groups	2112.312375	3	704.104125	12.22084744	0.000207036	3.238871517
Within Groups	921.84	16	57.615			
Total	3034.152375	19				

Inference: Table 19 shows that the p-value is much smaller than the level of 5% significance. F value is also less the critical value. Hence, we accept the null hypothesis and reject the alternate hypothesis that there is NO significant difference in the **DPS of** selected Pharmaceutical and Drugs companies.

8. RANKING OF THE SELECTED COMPANIES BASED ON STUDY :

Table 20: Ranking for the EPS of Selected BSE listed Pharmaceutical Companies

Rank	Large Scale	Medium Scale	Small Scale
1	Dr. Reddys Labs	Abbott India	Themis Medicare
2	Divis Labs	Alkem Lab	TTK Healthcare
3	Mankind Pharma	Aurobind Pharma	Novartis India
4	Cipla	Lupin	Amrutanjan Heal
5	Sun Pharma	Zydus Life	Sigachi Ind

Table 21: Ranking for the DPS of Selected BSE listed Pharmaceutical Companies

Rank	Large Scale	Medium Scale	Small Scale
1	Dr. Reddys Labs	Abbott India	Novartis
2	Divis Labs	Alkem Lab	Amrutanjan Heal
3	Sun Pharma	Lupin	TTK Healthcare
4	Mankind Pharma	Aurobindo Pharma	Themis Medicare
5	Cipla	ZYdus Life	Sigachi Ind

9. CONCLUSION :

This study examined the EPS and DPS of selected large, medium, and small-scale BSE-listed Indian Pharmaceutical companies. The time series data on different variables; EPS and DPS were taken for carrying out the study mainly from the websites of money control and NSE. The time period taken to analyse the EPS and DPS is 5 years period from 2019 to 2020 to 2022-2023. This study analysed the EPS and DPS of selected BSE-listed Indian Pharmaceutical companies. For the calculated EPS and DPS, descriptive statistics (Mean, Standard Error, Standard deviation, Skewness, and Kurtosis) were calculated. ANOVA test is conducted for EPS and DPS values to identify the difference among the selected BSE-listed pharmaceutical companies. It is suggested that investors invest in Dr. Reddys

Laboratories, Abbott India, and Themis Medicare for their EPS to be maximum and Dr. Reddys Laboratories, Abbott India, and Novartis India for their DPS to be maximum.

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International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN: 2581-6942, Vol. 8, No. 1, March 2024

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