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A Study on the Financial Health of Selected Indian Pharma Companies Using Altman's Z-Score Model

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ABSTRACT
The pharmaceutical sector in India plays a pivotal role in the nation's economy and healthcare system, contributing significantly to global medicine supply. Given the dynamic and competitive nature of this industry, it becomes essential to evaluate the financial health of pharmaceutical companies to ensure their long-term sustainability and growth. This study aims to analyse and compare the financial health of three selected Indian pharmaceutical companies—Cipla Ltd, Divis Laboratories Ltd, and Sun Pharmaceutical Industries Ltd—using the well-established Altman's Z-Score Model. The Z-Score, calculated using key financial ratios, serves as an effective tool for predicting the likelihood of corporate bankruptcy and assessing overall financial stability. The study employs five years of financial data from 2019-20 to 2023-24 to compute and interpret the Z-Scores for the selected companies. The findings of the study indicate that all three companies maintain Z-Scores well above the threshold of financial distress, signifying a low risk of insolvency. Divis Laboratories Ltd consistently demonstrates the highest financial stability, followed by Cipla Ltd, while Sun Pharmaceutical Industries Ltd, although showing steady improvement, records comparatively lower financial strength. The analysis also reveals that there is a significant difference in the financial health of these companies as measured by their Z-Score values. The study underscores the importance of continuous financial monitoring using robust models like the Altman Z-Score, which aids stakeholders in making informed investment, lending, and managerial decisions in the Indian pharmaceutical sector.
Keywords: Altman's Z-Score Model, Financial Health, Bankruptcy Prediction, Pharmaceutical Companies, Cipla Ltd, Divis Laboratories Ltd, Sun Pharmaceutical Industries Ltd, Financial Risk Analysis

1. INTRODUCTION

The Altman's Z-Score Model is one of the most widely used financial models for predicting the likelihood of corporate bankruptcy. Developed by Edward I. Altman in 1968, the model is based on a combination of financial ratios and is specifically designed to measure the financial health of a company. The main purpose of this model is to assess whether a firm is likely to enter into financial distress or insolvency within a certain period, usually two to three years. Over the years, the Z-Score model has become an essential tool for investors, creditors, financial analysts, and researchers to evaluate the risk associated with companies, especially in volatile and capital-intensive industries. The model combines five key financial ratios derived from a company's financial statements: Working Capital to Total Assets, Retained Earnings to Total Assets, Earnings Before Interest and Taxes (EBIT) to Total Assets, Market Value of Equity to Total Liabilities, and Sales to Total Assets. These ratios are then multiplied by specific weights determined through statistical analysis, and the sum of these weighted ratios provides the Z-Score. A higher Z-Score indicates better financial health and a lower likelihood of bankruptcy, while a lower Z-Score signals financial distress. Generally, a score above 2.99 is considered safe, between 1.81 and 2.99 is the "gray zone," and below 1.81 suggests a high risk of bankruptcy.

Altman originally developed the model using data from publicly traded manufacturing companies in the United States. Over time, several modifications have been made to adapt the model to different industries, including private firms and non-manufacturing sectors. Despite its age, the Z-Score model remains relevant and effective, especially when used alongside other financial analysis techniques. The simplicity, accuracy, and predictive power of the model have contributed to its long-standing popularity in both academic and corporate circles. In the context of India's pharmaceutical sector, Altman's Z-Score model can serve as a valuable tool to assess the financial status of companies in an industry that is characterized by high research and development costs, regulatory challenges, and global competition. The pharmaceutical industry in India plays a crucial role in the global supply of medicines, but companies in this sector can be vulnerable to financial instability due to market fluctuations, patent expirations, and

changing government policies. Applying the Z-Score model to Indian pharma companies provides insights into their financial resilience and ability to withstand adverse market conditions.
Furthermore, the model aids stakeholders such as investors, creditors, and regulatory authorities in making informed decisions. For investors, it helps in identifying companies that are financially sound and capable of delivering long-term value. For lenders and creditors, it provides early warning signals about potential defaults, enabling them to take precautionary measures. For policymakers, it offers valuable data that can be used to frame regulations that enhance the financial health and sustainability of the pharmaceutical industry. However, it is also important to recognize the limitations of the Altman Z-Score Model. Since it is primarily based on historical financial data, it may not fully capture the future prospects or non-financial factors affecting a company, such as innovation, brand value, or market dynamics. Moreover, the model was originally designed for manufacturing firms, and although it has been adapted for other sectors, care must be taken when applying it to industries with different business models and financial structures.

2. SIGNIFICANCE OF THE STUDY

The present study holds significant importance in today's dynamic business environment, particularly in the context of the Indian pharmaceutical industry. The pharmaceutical sector in India is one of the largest and fastest-growing in the world, contributing significantly to both the national economy and global healthcare. However, the sector faces numerous challenges such as increasing competition, stringent regulatory frameworks, pricing pressures, and the constant need for innovation through high research and development spending. These factors can expose pharmaceutical companies to varying degrees of financial risk, making it essential to periodically evaluate their financial health.

The application of Altman's Z-Score Model in this study is significant as it provides a scientific and statistically validated approach to assess the financial stability and potential risk of bankruptcy of the selected pharmaceutical companies. The model combines key financial ratios into a single composite score, offering a clear picture of a company's financial distress or stability. By applying this model to the selected Indian pharma companies, the study seeks to provide valuable insights into their financial performance, sustainability, and long-term viability. This is particularly crucial for stakeholders such as investors, creditors, management, policymakers, and regulators who rely on financial analysis for decision-making and strategic planning.
Another key significance of this study lies in its contribution to risk management and early warning systems. Timely identification of financial distress using models like the Z-Score can help companies take corrective actions before the situation worsens. It enables management to restructure operations, improve efficiency, and strengthen financial controls. Similarly, investors and financial institutions can use these findings to make informed decisions about where to allocate resources, which companies to support, or where caution is warranted.

Furthermore, this study adds academic value by bridging the gap between theoretical financial models and practical application in a specific industry context. While the Altman Z-Score model has been extensively used in various sectors, its application to the Indian pharmaceutical industry provides fresh empirical evidence and deepens understanding of the financial dynamics of this crucial sector. The findings of this study can serve as a reference point for future research, industry analysis, and policy development related to financial health and corporate sustainability.

3. LITERATURE REVIEW

Chien, F. (2021), This paper examines the reliability of Altman's Z-score model to predict financial failure in the ICT sector in Pakistan. Four ICT companies were in the distress zone, one in the gray zone, and six met the safe zone criteria based on Altman's Z-score model. Seven ICT companies were predicted not to go bankrupt, while four were at risk of financial failure. Significant positive and negative associations were found between certain financial ratios.

Pravin, P. (2023), The financial health of selected Indian pharmaceutical companies is satisfactory based on Altman's Z-score analysis. The average Z-score for the pharmaceutical sector was significantly higher than the threshold value, indicating a sound financial position. The sector is not at risk of bankruptcy, as

none of the companies fall into the distress zone. Investments in this industry are considered secure based on the financial health assessment.

Swalih, M. (2021), The Indian automobile industry is financially sound based on Altman's Z-score analysis. The Indian automobile industry is financially sound and robust, with companies listed on the NSE not prone to financial distress or bankruptcy. The study concludes that the industry is healthy, indicating a low risk of bankruptcy or financial distress. Both institutional and individual investors are recommended to invest in the industry due to its financial stability.

Festa, G. (2021), The financial structure of top Indian pharmaceutical companies appears stable, and intellectual capital can contribute to their financial stability. The financial structure of the top five Indian pharmaceutical companies is stable, with no risk of bankruptcy and attractive investment potential. Intellectual capital (IC) can support financial stability, particularly through patents and intellectual property. Despite stability, companies face challenges like controlled pricing, which discourages R&D investment, suggesting a need for IC investment.

Tanjung, P. R. S. (2020), The Altman Z-score model is the most accurate in predicting financial distress of Indian pharmaceutical companies compared to other models. There is a significant difference between the Altman, Springate, Zmijewski, and Ohlson models in predicting financial distress. The Altman model is the most accurate prediction model for predicting financial distress.

Cındık, Z. (2021), This paper compares the accuracy of different financial distress prediction models, including Altman's Z-Score, for Turkish companies. The Random Forest model, using Altman variables, showed a high performance of 95% and outperformed other models in predicting financial distress. The Random Forest model achieved a perfect classification accuracy of 100% for publicly traded companies. The study evaluated and modified the Altman Z-score model for Turkish firms to improve prediction power.

Elia, J. (2021), The paper validates the use of Altman's Z-score model to predict financial distress in Lebanese Alpha banks. The study validated the Altman Z"-score model for predicting financial distress in Lebanese Alpha banks from 2009 to 2018. The majority of the Alpha banks had Z"-score values below 1.1, indicating financial distress during the study period. The Z"-score model is recommended as a valuable tool for stakeholders to make informed decisions regarding financial distress or failure.

Parikh, P. N. (2024), The financial health of selected Indian pharmaceutical companies is evaluated using Altman's Z-score and Beneish's M-score models. The selected pharmaceutical companies generally exhibit strong financial health, with low risk of bankruptcy as indicated by Altman Z-scores. Individual companies showed varied financial performance: Sun Pharmaceutical Industries Ltd. improved significantly, Lupin Limited had a brief dip but recovered, and Aurobindo Pharma Limited, Dr. Reddy's Laboratories, and Cipla Limited demonstrated stability. The Beneish M-score analysis indicated a low risk of earnings manipulation for most companies, with occasional high-risk years for Lupin Limited.

Nofitasari, H. (2021), The Altman Z-Score analysis shows that the selected Indian pharmaceutical companies are not predicted to have the potential for bankruptcy. The study predicts that pharmaceutical companies listed on the IDX from 2015 to 2019 are not likely to experience bankruptcy based on the Altman Z-Score method. The average Z value of 1.81 indicates a low risk of bankruptcy for these companies.

Devi, R. S. (2022), The paper applies Altman's Z-score model to assess the financial soundness of Sun Pharmaceutical Industries in India. The study uses the Altman Z score to assess the financial stability of Sun Pharmaceutical Industries. Ten-year financial data was used to examine the company's financial health. The results provide valuable insights for planning and decision-making, aiding in developing future strategies.

Moshiuddullah, A. B. M. (2023), The paper assesses the financial health of selected pharmaceutical companies in Bangladesh using Altman's Z-score model. The financial position of Square Pharmaceutical Ltd. is significantly better than that of the other four selected pharmaceutical companies in Bangladesh. Beximco and Beacon Pharmaceutical's financial stability fluctuates over time, as indicated by their Z-score values. The study's findings are useful for investors and stakeholders in the Bangladesh pharmaceutical sector to make informed investment decisions.

Srinivas, T. (2023), The study uses the Altman Z-Score model to assess the financial distress of selected NIFTY 50 companies in the Indian stock market, finding that 9 out of 39 companies are in a state of bankruptcy. Out of the 39 selected NIFTY 50 companies, 9 are in a state of bankruptcy as per the Altman Z-Score model. 15 companies are categorized as "Too Healthy," indicating no risk of bankruptcy. 15 companies are in the "Healthy" zone, requiring improvement to avoid potential bankruptcy, and another 15 are in the "Bankruptcy" zone with unfavourable financial statements.

Akter, S. (2021), The financial health of selected Bangladeshi pharmaceutical companies is assessed using Altman's Z-score model. SQUARE Pharmaceuticals Ltd, Renata Limited, and IBN SINA Pharmaceutical Limited are in a very good financial position with higher Z-Scores. Beacon Pharmaceuticals Limited and Ambee Pharmaceuticals Limited are improving, with Beacon moving out of the grey zone in 2019 and Ambee showing year-by-year improvement. ACI Limited and Beximco Pharmaceuticals Limited are financially unhealthy, with ACI at high risk of bankruptcy and Beximco in a grey zone.

Abdulkareem, A. M. (2020), The study analyses the financial performance of selected Indian pharmaceutical companies using leverage and cost of capital metrics. The study found significant differences in operating, financial, and combined leverage among the selected pharmaceutical companies. Sun Pharma performed well during the study period, while Lupin underperformed in all aspects. There was no significant difference in the cost of capital among the pharmaceutical companies in India during the study period.

Pratiwi, M. R. (2023), The paper compares the Altman and Grover methods for predicting bankruptcy in Indian pharmaceutical companies, finding the Grover method to be more accurate. The Altman method classified 6 companies as healthy and 3 as distressed or in the gray area, while the Grover method classified all 9 companies as financially healthy. The Grover method achieved 100% accuracy, outperforming the Altman method's 77.7% accuracy in predicting bankruptcy. The study suggests that the Grover method is more accurate for predicting bankruptcy in pharmaceutical companies listed on the Indonesia Stock Exchange from 2019 to 2021.

Nimbalkar, P. (2022), The paper uses Altman's Z-score model to analyse the financial health of selected Indian cement companies. Most of the cement companies in India are not in good financial health. Technological and managerial upgrades are necessary to improve financial performance. The study uses the Altman Z score model to predict corporate failure and assess financial soundness.

4. RESEARCH OBJECTIVES

1. To analyse the financial health of selected pharma companies based on Altman's Z-Score Model.
2. To compare the financial health of selected pharma companies based on Altman's Z-Score Model.

5. SAMPLE SIZE

In this study below mentioned 3 companies have been taken.

- Cipla Ltd
- Divis Laboratories Ltd
- Sun Pharmaceutical Industries Ltd

6. DATA ANALYSIS

Table 1 : Altman's Z-Score Model for Selected Pharma Companies

ALTMAN Z SCORE MODEL			
YEAR	**Cipla Ltd**	**Divis Laboratories Ltd**	**Sun Pharmaceutical Industries Ltd**
2023-24	25.26	31.05	14.62
2022-23	16.34	29.3	9.16
2021-22	18.42	45.93	8.59
2020-21	14.63	42.08	6.87
2019-20	8.49	28.39	4.4

The table presents the Altman Z-Score values for three major Indian pharmaceutical companies—Cipla Ltd, Divis Laboratories Ltd, and Sun Pharmaceutical Industries Ltd—over a five-year period from 2019-20 to 2023-24. The Z-Score, calculated using the formula involving key financial ratios (working capital to total assets, retained earnings to total assets, EBIT to total assets, market capitalization to total liabilities, and sales to total assets), serves as an indicator of the companies' financial health and the likelihood of bankruptcy. A higher Z-Score indicates stronger financial stability, while a lower score may suggest vulnerability to financial distress.

Analysing Cipla Ltd, the Z-Score shows an overall improvement over the five-year period. In 2019-20, Cipla's Z-Score stood at 8.49, which is already well above the commonly accepted distress threshold of 1.81. The score demonstrates a consistent upward trend, reaching 14.63 in 2020-21 and further increasing to 18.42 in 2021-22. Though there was a slight dip to 16.34 in 2022-23, the company showed remarkable financial improvement in 2023-24 with a Z-Score of 25.26. This consistent performance suggests that Cipla has maintained strong financial stability, profitability, and operational efficiency over the years, reinforcing its position as a financially healthy company in the Indian pharmaceutical sector.

Turning to Divis Laboratories Ltd, the Z-Score indicates exceptionally high financial health throughout the period under study. Starting from an impressive 28.39 in 2019-20, Divis Laboratories consistently improved its financial standing, reaching 42.08 in 2020-21 and peaking at 45.93 in 2021-22. Although there was a slight decline to 29.3 in 2022-23, the company bounced back to 31.05 in 2023-24. These consistently high scores reveal that Divis Laboratories has robust profitability, strong retained earnings, and excellent market capitalization relative to its liabilities. The financial ratios that contribute to the Z-Score evidently reflect the company's ability to sustain growth, manage assets efficiently, and mitigate financial risks effectively. The values remain significantly above the risk zone, indicating zero immediate threat of financial distress.

For Sun Pharmaceutical Industries Ltd, the Z-Score also shows a positive upward trend, though at a relatively lower range compared to the other two companies. The Z-Score was at a modest 4.4 in 2019-20, suggesting limited financial strength at that time. However, the company showed gradual improvement, with the score rising to 6.87 in 2020-21, 8.59 in 2021-22, and 9.16 in 2022-23. In 2023-24, the Z-Score further increased to 14.62, indicating a significant enhancement in financial health. Though Sun Pharma's Z-Scores are lower than those of Cipla and Divis Laboratories, they are consistently above the danger zone and reflect a company that is steadily improving its profitability, asset management, and market strength over the years. The continuous rise suggests that the company is implementing effective financial strategies and has strengthened its position in the industry.

Comparing the three companies, Divis Laboratories Ltd consistently demonstrates the strongest financial stability with Z-Scores that significantly exceed those of Cipla and Sun Pharma. Cipla Ltd also shows robust financial health with a steady upward trajectory, particularly highlighted by the sharp increase in 2023-24. Sun Pharmaceutical Industries Ltd, while initially on a weaker footing, displays a commendable gradual improvement, indicating successful financial recovery and growth over time.

The use of Altman's Z-Score in this analysis highlights the importance of combining multiple financial indicators to assess overall corporate health. Factors such as efficient working capital management, strong retained earnings, operational profitability, favourable market capitalization, and effective asset utilization contribute to the strength of these companies. All three pharmaceutical giants appear to be financially sound with low risk of financial distress, reflecting the resilience and growth potential of the Indian pharmaceutical industry as a whole.

Table 2 : Descriptive Statistics for the Altman's Z-Score

VARIABLE	**Cipla Ltd**	**Divis Laboratories Ltd**	**Sun Pharmaceutical Industries Ltd**
Mean	16.628	35.350	8.728
Standard Error	2.721	3.611	1.690
Median	16.340	31.050	8.590
Standard Deviation	6.083	8.074	3.778
Sample Variance	37.006	65.191	14.276
Kurtosis	1.095	-2.526	1.617
Skewness	0.189	0.674	0.905
Range	16.770	17.540	10.220
Minimum	8.490	28.390	4.400
Maximum	25.260	45.930	14.620
Sum	83.140	176.750	43.640
Count	5	5	5

Here is a detailed interpretation of the descriptive statistics for the Altman's Z-Score values of Cipla Ltd, Divis Laboratories Ltd, and Sun Pharmaceutical Industries Ltd based on the data provided:

The mean Z-Score represents the average financial health over the five-year period. Among the three companies, Divis Laboratories Ltd has the highest mean Z-Score of 35.350, indicating superior financial stability and an extremely low likelihood of financial distress. Cipla Ltd has a mean Z-Score of 16.628, which also reflects strong financial performance, while Sun Pharmaceutical Industries Ltd has the lowest mean Z-Score of 8.728, suggesting that while the company is not in immediate financial distress, it maintains comparatively lower financial strength than the other two firms.

The standard deviation and variance indicate the level of volatility or consistency in the financial health of the companies. Divis Laboratories Ltd exhibits the highest standard deviation of 8.074 and variance of 65.191, suggesting greater fluctuations in its Z-Score over the years. This means that while Divis maintains high average financial stability, there have been notable variations in its year-on-year financial performance. Cipla Ltd shows a standard deviation of 6.083 and variance of 37.006, reflecting moderate variability. Sun Pharma, with the lowest standard deviation of 3.778 and variance of 14.276, demonstrates the most stable Z-Score values over time, albeit at lower absolute levels. This stability indicates consistent financial performance without sharp upward or downward swings.

The median values reinforce the central tendency of the data. Divis Laboratories Ltd has a median of 31.050, showing that its typical Z-Score is comfortably above the threshold for financial distress. Cipla Ltd has a median of 16.340, closely aligning with its mean, indicating symmetrical performance. Sun

Pharma's median Z-Score is 8.590, again confirming its consistent but relatively lower financial health position.

Kurtosis values reveal the nature of the distribution tails. Divis Laboratories Ltd has a negative kurtosis of -2.526, suggesting a flatter distribution with fewer extreme values—meaning its Z-Scores are spread closer to the mean without sharp peaks or outliers. In contrast, Cipla Ltd (1.095) and Sun Pharma (1.617) show positive kurtosis, indicating more peaked distributions with heavier tails. This suggests that these two companies experienced more extreme or concentrated Z-Score values around certain periods.

The skewness values show the symmetry of the data distribution. All three companies have positive skewness values, with Sun Pharma (0.905) displaying the highest skewness, followed by Divis (0.674) and Cipla (0.189). This indicates that for all three companies, there were occasional higher Z-Score values pulling the distribution to the right. The higher skewness in Sun Pharma suggests a few years of stronger financial performance relative to its historical baseline.

The range of Z-Score values is widest for Cipla Ltd (16.770), followed closely by Divis Laboratories Ltd (17.540). Sun Pharma's range of 10.220 is narrower, reflecting lower variability in its financial health over the observed years. The minimum and maximum values further confirm this spread, with Divis Laboratories achieving the highest Z-Score of 45.930, far exceeding the peaks of Cipla (25.260) and Sun Pharma (14.620). On the lower side, all three companies maintained Z-Scores well above the critical distress zone (1.81), with the lowest being Sun Pharma's 4.400 in 2019-20, still indicating no immediate bankruptcy threat.

The sum and count values confirm the dataset comprises five years of observations for each company. Divis Laboratories not only has the highest cumulative Z-Score (176.750) but also the highest individual and average yearly values, reaffirming its leadership in financial stability among the three.

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Cipla Ltd	5	83.14	16.628	37.0062
Divis Laboratories Ltd	5	176.75	35.35	65.1909
Sun Pharmaceutical Industries Ltd	5	43.64	8.728	14.2763

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1869.42	2	934.712	24.0754	6.30439E-05	3.88529
Within Groups	465.893	12	38.8244			
Total	2335.32	14				

H0 = There is no significant difference in Altman Z Score Model between selected pharma companies of India.

INTERPRETATION
From above table for 2 and 12 degree of freedom
Fcal is 24.0754 and Ftab is 3.88529
P-value is 6.30439E-05
Thus, Fcal>Ftab and p-value is smaller than specified α of 0.05

So, null hypothesis is rejected and it is concluded that there is significant difference in Altman Z Score Model between selected pharma companies of India.

7. CONCLUSION

Based on the analysis of the Altman's Z-Score Model applied to the selected Indian pharmaceutical companies—Cipla Ltd, Divis Laboratories Ltd, and Sun Pharmaceutical Industries Ltd—over the five-year period from 2019-20 to 2023-24, several important conclusions can be drawn regarding their financial health and stability.

The study reveals that all three companies have maintained Z-Scores that are well above the traditional threshold of financial distress (1.81), indicating that none of them are at immediate risk of bankruptcy. However, there are clear and notable differences in the level of financial strength and consistency among these companies. Divis Laboratories Ltd consistently exhibits the highest Z-Score values, with an impressive peak of 45.93 in 2021-22 and a five-year average of 35.35. This performance reflects outstanding financial stability, strong profitability, effective asset utilization, and a sound capital structure. The company's exceptionally high Z-Scores across all years suggest a very low risk of financial distress and showcase its leadership position in terms of financial robustness within the Indian pharmaceutical industry.

Cipla Ltd, on the other hand, displays a positive upward trend in its Z-Scores, improving significantly from 8.49 in 2019-20 to 25.26 in 2023-24. The five-year average Z-Score of 16.63 places Cipla in a financially strong position, though slightly below that of Divis Laboratories. The company's steady improvement reflects enhanced profitability, better working capital management, and an increase in overall market confidence. This trend highlights Cipla's ability to strengthen its financial position over time, signaling effective strategic and operational management.

Sun Pharmaceutical Industries Ltd shows the lowest Z-Scores among the three, starting at 4.40 in 2019-20 and rising to 14.62 in 2023-24, with an average Z-Score of 8.73. Although the company has shown continuous financial improvement, its Z-Scores remain considerably lower than those of Cipla and Divis. Nevertheless, Sun Pharma's scores remain comfortably above the distress zone, indicating that while the company's financial strength is relatively weaker, it is not in immediate danger of insolvency. The consistent upward trend reflects gradual enhancement in financial performance, though there is still scope for further improvement in profitability and operational efficiency.

The descriptive statistics further support these observations. Divis Laboratories Ltd not only has the highest mean and maximum Z-Scores but also shows greater variability, indicating both high performance and some fluctuation over the years. Cipla Ltd demonstrates moderate variability, while Sun Pharma displays the most stable but lowest Z-Score values, with the least fluctuation. The skewness and kurtosis values indicate that while all three companies have experienced years of stronger financial performance, Divis Laboratories stands out as the most financially resilient.

A key finding of the study is that there is a significant difference in the Altman Z-Score values between the selected pharmaceutical companies of India. This statistically significant difference underscores the varying degrees of financial strength, risk management, and operational efficiency across these firms. The divergence in Z-Scores reflects differences in business models, market strategies, asset utilization, profitability, and capital structures. Divis Laboratories clearly emerges as the financial leader, followed by Cipla Ltd, while Sun Pharma, despite showing improvement, lags behind in terms of financial stability.

Overall, this study highlights the effectiveness of Altman's Z-Score Model as a valuable tool for assessing the financial health and bankruptcy risk of companies in the Indian pharmaceutical sector. The findings are highly relevant for investors, creditors, policymakers, and corporate management. The significant differences identified between the companies call for tailored financial strategies and ongoing monitoring to ensure long-term sustainability and growth. Companies with lower Z-Scores, such as Sun Pharma, should focus on strengthening their profitability, asset efficiency, and capital management to enhance their financial resilience. This study contributes to a deeper understanding of financial risk assessment in the Indian pharmaceutical industry and underscores the importance of continuous financial health evaluation for maintaining competitiveness in an evolving global market.

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