

Company Risk of Selected Pharmaceutical Companies in India During the Post-Liberalisation Era: An Empirical Assessment

Rupa Yadav

Assistant Professor, New Alipore College, Kolkata

Abstract

An overall improvement in health standards contributes to the economic growth of a nation. A healthy population plays a vital role in fostering a strong economy, making investments in healthcare a top priority for most countries worldwide. India plays a significant role in the global healthcare sector, particularly in the pharmaceutical industry. The Indian Pharmaceutical Industry has experienced rapid growth, with a yearly growth rate of 9.4 percent. Since Globalisation, the Indian pharmaceutical industry has undergone a remarkable transformation on the economic front, leading to the noticeable changes in the company risk patterns. As a result, Indian pharmaceutical companies have had to readjust their strategies to manage their company risks. While some companies have successfully adapted to the new environment by implementing appropriate measures, others have struggled to do so. In the present paper an attempt has been made to analyse the company risk of 15 selected Indian Pharmaceutical Companies during the period 2004-05 to 2021-22.

Keywords: Pharmaceutical Sector, Company risk, Globalisation.

I. Introduction

Risk management is a fundamental aspect of running a business, serving as a critical tool to protect and enhance the organization's value. In today's complex and dynamic business environment, companies face various uncertainties and potential threats that can impact their operations, financial stability, and reputation. Effective risk management entails identifying, assessing, and mitigating these risks to ensure the achievement of business objectives and long-term sustainability. By proactively managing risks, companies can minimize potential losses, capitalize on opportunities, and make informed decisions that positively impact their performance and value. By taking calculated risks, businesses can innovate, seize competitive advantages, and drive growth. Successful risk management is not about eliminating risks entirely but rather about understanding, evaluating, and managing risks within acceptable parameters, aligned with the organization's risk appetite and strategic objectives. Ultimately, by embedding risk management into the fabric of the business, organizations can enhance decision-making, protect their assets, safeguard their reputation, and create long-term value for their stakeholders. An overall improvement in health standards contributes to the economic growth of a nation. A healthy population plays a vital role in fostering a strong economy, making investments in healthcare a top priority for most countries worldwide. India plays a significant role in the global healthcare sector, particularly in the pharmaceutical industry. The Indian Pharmaceutical Industry has experienced rapid growth, with a yearly

growth rate of 9.4 percent. It has become the third largest market in terms of volume and the thirteenth largest in terms of value. The industry is projected to continue growing at a Compound Annual Growth Rate (CAGR) of 15 percent in the near future. Among the 20,000 registered units in the industry, including organized, unorganized, and multinational corporations (MNCs), 250 large units and 8,000 small-scale units control 70 percent of the market share. Additionally, India is known for producing low-cost drugs and satisfies 50 percent of the global demand for vaccinations. Indian-made medicines account for 40 percent of generic drug consumption in the US and 25 percent in the UK. Furthermore, Indian drugs are exported to over 200 countries worldwide, with the US being the primary market. In the fiscal year 2021-22, India's pharmaceutical exports reached US\$ 24.60 billion. Overall, the Indian pharmaceutical sector's multifaceted roles in healthcare, economic growth, employment, exports, research, affordability, and infrastructure support are crucial for India's overall progress. Its continuous growth, focus on quality, innovation, and accessibility will further strengthen its impact on shaping the future of healthcare and contributing to the nation's development. Since July 1991, the Indian pharmaceutical industry has undergone a remarkable transformation on the economic front. Many Indian pharmaceutical companies have expanded their business operations into new geographical areas and have sought listings on foreign exchanges. This expansion has exposed them to various risks stemming from different economic, political, cultural, and global uncertainties (Ghosh, 2013). Globalization, coupled with changes in corporate affairs, has significantly impacted earning trends, cost behaviour patterns, capital productivity, and liquidity policies in the Indian pharmaceutical sector. Consequently, there have been noticeable changes in the company risk patterns associated with this sector. In the post-liberalization era, Indian pharmaceutical companies have had to readjust their strategies to manage their company risks and its components. While some companies have successfully adapted to the new environment by implementing appropriate measures, others have struggled to do so (Mallik & Sur, 2009; Mallik et al., 2016).

Over the past few decades, several studies have been conducted to analyze company risk in the corporate sector, both in India and internationally. Some of these studies have focused on the impact of post-liberalization, and there has also been a recent study on this issue in the Fast-Moving Consumer Goods (FMCG) sector. However, there has been a lack of research specifically addressing the analysis of company risk in the Indian Pharmaceutical Industry. In fact, there have been no significant studies conducted thus far that provide an in-depth analysis of company risk in Indian pharmaceutical companies. In light of this gap, the present study aims to analyze the company risk of a selected pharmaceutical company in India, focusing on the period from 2004-05 to 2021-22.

The remaining sections of this paper are organized as follows: Section II provides a concise overview of relevant studies conducted in both India and abroad that are pertinent to the subject matter addressed in this study. Section III outlines the objectives of the present study. Section IV describes the methodology employed for this research. Moving on to Section V, empirical results and discussions are presented. Finally, in Section VI, concluding remarks summarizing the findings of the study are provided.

II. Review of related literature

Ghosh and Maji (2006) examined the impact of operating leverage on profitability in four manufacturing sectors in India: Tea, Chemical, Paper, and Pharmaceutical. The study included a sample of seventy-two Indian companies from these industries, spanning a twelve-year period from 1990-91 to 2001-02. The

results consistently showed a positive correlation between operating leverage and profitability across all sectors.

In their study, **Mishra and Mishra (2007)** analysed the risk and return of different sectors in the Indian economy using both market-based and accounting-based information. The market-based analysis identified FMCG, health care, and oil and gas sectors as the most defensive, while metal and IT sectors were considered the most aggressive. On the other hand, the accounting-based analysis revealed that FMCG, metal, and IT sectors had the highest business risk, whereas technology, auto, and public sector units had the least.

Dhanabhakym and Balasubramaniun (2012) conducted research to assess the business and financial risks in three sectors of India: automobiles, refineries, and steel industries. They analyzed data from five companies in each sector, spanning from 1999-2000 to 2008-2009. The results revealed that none of the industries consistently achieved a favorable balance between business and financial risks throughout the study period. Furthermore, the study did not find significant evidence supporting a positive correlation between risk and return for the examined companies within the specified timeframe.

In his study, **Kumar (2014)** investigated the relationship between leverage and profitability in Bata India Limited. By analyzing data from 2006 to 2013, he examined the company's performance over a seven-year period. The study highlighted a significant correlation between the degree of combined leverage and Bata India's return on investment (ROI). While Bata India's financial performance was considered satisfactory, the study indicated that the company was not fully utilizing its debt funds, missing out on potential benefits of financial leverage. Kumar strongly recommended that Bata India re-evaluate its capital structure to maximize shareholder wealth and capitalize on promising financial opportunities.

Ali et al. (2018) conducted a study to examine the impact of risk on the financial performance of commercial banks in Pakistan. To conduct their study, they gathered data from the published annual statements of ten banks, comprising five large banks and five small banks. This data covered a period of eleven years, from 2005 to 2015. They used a regression model to analyze the collected data. The findings of the study revealed that risk management variables, namely credit risk, market risk (interest rate risk), liquidity risk, and operational risk, had noteworthy and unfavorable impacts on the financial performance of the chosen large commercial banks. In contrast, for the selected small banks, the effect of operational risk on financial performance was significant but positive.

III. Objectives of the Study

The main objectives of this study are to analyze the company risk of selected pharmaceutical companies in India, focusing on the post-liberalization era. Specifically, the study aims to achieve the following:

- (i) To quantify the level of risk associated the selected pharmaceutical companies in India and to compare the same with Indian pharmaceutical industry average.
- (ii) To assess the components of the company risk associated with each of the companies under study and to determine if there were any similarities among these components.
- (iii) To examine the relationship between company risk and its components of the companies under study.

- (iv) To examine and understand the relative risk and return status of the selected pharmaceutical companies under study.

IV. Methodology of the Study

The study focuses on fifteen companies selected from the top twenty Indian pharmaceutical companies based on market capitalization. The selection process followed purposive sampling, ensuring the inclusion of relevant data for the period from 2004-05 to 2021-22. The data for the study was collected from secondary resources, specifically Capitaline and the corporate database of Capital Market Publishers (I) Ltd. in Mumbai. Since the liberalization process in India began in the financial year 1991-1992, its immediate effects were not immediately apparent. Therefore, the year 2004-05 was chosen as the starting point for analyzing the post-liberalization period in this study. To measure company risk and its components for the selected companies, the Ginni's coefficient of concentration (G) was utilized. Additionally, various statistical techniques such as Kendall's coefficient of concordance, Pearson's simple correlation analysis, Spearman's rank correlation analysis, Kendall's correlation analysis, as well as statistical tests like t-tests and Chi-square tests (χ^2) were applied as necessary during the analysis process.

V. Empirical Analysis

1. Table 1 presents an analysis of the company risk (CR) associated with the chosen pharmaceutical companies in India during the study period. The CR of each company was determined using Ginni's coefficient of concentration of operating profit to capital employed (OPCE) ratio. The results in Table 1 indicate that Sun Pharma had the highest degree of CR, followed by Cipla, JB Chemicals, Dr. Reddy's Lab, Abbott India, Pfizer, Sanofi, Torrent Pharma, Aurobindo Pharma, Ajanta Pharma, Ipca, GlaxosmithKline, Zydus, Life, Divis Lab, and Lupin respectively in that order. Sun Pharma's CR was significantly higher than the Indian pharmaceutical industry average while the remaining fourteen companies had CR values below the industry average. To further analyze the CR associated with the selected companies, Table 1 categorizes them into three groups based on their CR values. Companies with CR values above 0.25 were classified as having a high level of CR, those within the range of 0.15 to 0.25 were considered to have a moderate level of CR, and companies with CR values below 0.15 were labelled as having a low level of CR. From Table 1, it can be observed that out of the fifteen selected pharma companies in India, nine were classified as highly risky, four were considered moderately risky, and the remaining two were deemed less risky in terms of their CR levels.
2. In Table 2 three major components of company risk, namely Liquidity risk (LR), Cost structure risk (CSR) and Capital productivity risk (CPR) of each of the selected companies were measured by Ginni's coefficient of concentration of current ratio, that of fixed cost to total cost ratio, and that of capital turnover ratio respectively. In order to examine whether there was uniformity among LR, CSR and CPR of the selected companies, Kendall's coefficient of concordance (W) was used. For testing the significance of such coefficient, Chi-square test (χ^2) was applied. Table 2 discloses that risk in respect of short-term debt paying capability was the maximum in Sun Pharma and the next four positions were occupied by Lupin, GlaxosmithKline, Divis Lab, Pfizer respectively while the degree of LR was least in Zydus Life. While comparing the LR of each of the selected companies with the LR of Indian pharmaceutical industry average, it was observed that Sun Pharma was placed in the category of 'LR above the Indian pharmaceutical industry average' but the remaining fourteen companies found place in the category of 'LR below the Indian pharmaceutical industry average'. In

respect of CSR, Torrent Pharma captured the top most position and the next four positions were occupied by Pfizer, Sanofi, GlaxosmithKline, Abbott India respectively whereas the degree of CSR was the minimum in Ipca. The CSR of all fifteen companies under study was found to be lower in comparison to the Indian pharmaceutical Industry average. Sun Pharma maintained highest level of risk in respect of capital productivity front, followed by Pfizer, Lupin, Zydus Life, Ajanta Pharma and so on while the degree of CPR was least in Dr. Reddy's Lab. Based on CPR value, out of fifteen selected companies only sun pharma found place in the category of 'CPR above the Indian pharmaceutical industry average' while the remaining fourteen companies found place in the category of 'CPR below the Indian pharmaceutical industry average'. The calculated value of Kendall's coefficient of concordance (W) was lower than the table value of W therefore, no strong evidence of uniformity among the LR, CSR and CPR was observed during the period covered under the study.

3. In an effort to examine the relationship between company risk and its individual components in the selected companies, Table 3 presents the results obtained using correlation measures: Pearson's simple correlation, Spearman's correlation, and Kendall's coefficient of correlation. Furthermore, a t-test was employed to determine the statistical significance of these correlation coefficients. Table 3 indicates that all nine correlation coefficients between company risk and its components were positive. Among these coefficients, four were found to be statistically significant, while the remaining five coefficients did not reach statistical significance, even at a significance level of 5 per cent.
4. **Table 4** presents an analysis of the relationship between company risk (CR) and overall profitability in the selected companies. Additionally, it examines the relationship between each component of company risk and the overall profitability using correlation measures such as Pearson's simple correlation, Spearman's correlation, and Kendall's coefficient of correlation. To determine the statistical significance of these correlation coefficients, a t-test was conducted. The results in Table 4 reveal that all twelve correlation coefficients between CR and OPCE are positive. Among these coefficients, six were found to be statistically significant, indicating a strong relationship between company risk and overall profitability. However, the remaining six coefficients were not found to be statistically significant even at a 5 per cent significance level, suggesting a weaker or non-significant relationship between specific components of company risk and overall profitability.

VI. Concluding Observations

1. During the study period, Sun Pharma exhibited the highest level of volatility in operating profitability among the selected pharmaceutical companies, indicating a greater degree of risk in its overall business operations. More than 90 per cent of the selected Indian Pharmaceutical companies maintained their company risk below the Indian pharmaceutical industry average. Another significant outcome of the study is that based on the systematic analysis, 60 per cent, 26 per cent and 14 per cent of the selected companies found place in the categories of higher level, medium level and lower level of CR respectively during the period under study.
2. 93 per cent, 100 per cent and 93 per cent of the selected Indian pharmaceutical companies maintained their LR, CSR and CPR at the level below the Indian pharmaceutical industry average.
3. Sun pharma faced the highest risk in respect of both liquidity and capital productivity front while it occupied the seventh rank in respect CSR during the study period. However, Lupin captured the second rank in respect of LR, third in respect of CPR while it occupied twelfth rank in respect of CPR. Torrent Pharma bore maximum risk on cost structure front and in respect of LR and CSR the company was

placed on the eleventh and sixth position respectively. Pfizer occupied fifth, second and second positions in respect of LR, CSR and CPR respectively. Dr. Reddy's Lab captured the twelfth, eleventh and fifteenth ranks in respect of LR, CSR and CPR respectively. This kind of parity was observed in most of the companies under study. Despite of that no strong evidence of uniformity among LR, CSR and CPR was noticed during the period under study.

4. The analysis of the correlation between CR and its individual components revealed that two factors,

Table 1				
Company risk of selected pharmaceutical companies in India				
Sl. No.	Company Name	Company Risk	Status	Rank
1	Sun Pharma	0.66	A, H	1
2	Divis Lab	0.11	B, L	15
3	Dr. Reddy's Lab	0.22	B, H	6
4	Cipla	0.16	B, H	12
5	Torrent Pharma	0.22	B, H	7
6	Zydus Life	0.18	B, M	10
7	Abbott India	0.11	B, L	14
8	Aurobindo Pharma	0.26	B, H	4
9	Lupin	0.28	B, H	3
10	Glaxosmith Kline	0.15	B, M	13
11	Ipca	0.21	B, H	8
12	Pfizer	0.24	B, H	5
13	JB Chemicals	0.18	B, M	9
14	Ajanta Pharma	0.42	B, H	2
15	Sanofi	0.16	B, M	11
Industry Average = 0.457				
Source: Compiled and computed from Capitaline Corporate Database of Capital Market Publishers(I) Ltd., Mumbai.				

LR and CPR, emerged as significant contributors to the overall CR of the selected companies during the study period. These two components played a notable role in influencing and shaping the level of risk associated with the companies under examination.

5. A high degree of positive association between company risk and return is theoretically desirable. The analysis of interrelationship between CR and return made in the study by using three different correlation measures provided a strong evidence of positive association between CR and return of the selected companies in all the three cases. It reflects that high risk was compensated by high-risk premium i.e. high return in the selected pharmaceutical companies in India during the study period.

Table 2

Components of Company risk of selected pharmaceutical Companies in India.

Sl. No.	Company Name	LR	Status	Rank	CSR	Status	Rank	CPR	Status	Rank
1	Sun Pharma	0.482	A	1	0.197	B	7	0.629	A	1
2	Divis Lab	0.253	B	4	0.093	B	14	0.125	B	10
3	Dr. Reddy's Lab	0.136	B	12	0.109	B	10.5	0.056	B	15
4	Cipla	0.160	B	9	0.109	B	10.5	0.130	B	9
5	Torrent Pharma	0.141	B	11	0.303	B	1	0.149	B	6
6	Zydus Life	0.100	B	15	0.120	B	9	0.193	B	4
7	Abbott India	0.191	B	7	0.220	B	5	0.132	B	8
8	Aurobindo Pharma	0.110	B	14	0.145	B	8	0.112	B	11
9	Lupin	0.258	B	2	0.106	B	12	0.201	B	3
10	GlaxosmithKline	0.256	B	3	0.234	B	4	0.090	B	13
11	Ipca	0.145	B	10	0.084	B	15	0.133	B	7
12	Pfizer	0.217	B	5.5	0.297	B	2	0.209	B	2
13	JB Chemicals	0.162	B	8	0.094	B	13	0.093	B	12
14	Ajanta Pharma	0.217	B	5.5	0.211	B	6	0.172	B	5
15	Sanofi	0.133	B	13	0.246	B	3	0.078	B	14
Industry Average		0.270				0.590				
0.280										
W= 0.4390										
X ² = 18.438										
Source: Compiled and computed from Capitaline Corporate Database of Capital Market Publishers(I) Ltd., Mumbai.										

Tables

Table 3

Correlation between Company Risk and its components of the selected pharmaceutical companies in India

Correlation coefficient between Correlation Measures	Company risk and LR	Company Risk and CSR	Company Risk and CPR
Pearson	0.712**	0.139	0.860**

Spearman	0.147	0.084	0.548*
Kendall	0.078	0.078	0.398*
** Significant at 1 per cent level			
*Significant at 5 per cent level			
Source: Compiled and computed from Capitaline Corporate Database of Capital Market Publishers(I) Ltd., Mumbai.			

Table 4

Analysis of Correlation between Risk and Return of selected companies in Indian Pharmaceutical Sector

Correlation coefficient between Correlation Measures	Company risk and Return	Liquidity Risk and Return	Cost Structure Risk and Return	Capital Productivity Risk and Return
Pearson	0.995**	0.739**	0.109	0.868**
Spearman	0.977**	0.174	0.004	0.533*
Kendall	0.941**	0.077	0.019	0.375
** Significant at 1 per cent level				
*Significant at 5 per cent level				
Source: Compiled and computed from Capitaline Corporate Database of Capital Market Publishers(I) Ltd., Mumbai.				

References

1. **Ghosh, S. K., & Maji, S. G. (2006).** Impact of Operating Leverage on Profitability: An Empirical Study on Selected Indian Industries. *Management Accountant-Calcutta*, 41(8), 660.
2. **Gupta, A., & Sur, D. (2013).** Business and financial risks in Hindustan Unilever Ltd.: an empirical analysis. *Asia-Pacific Finance and Accounting Review*, 1(4), 77-93.
3. **Gupta, A., & Sur, D. (2015).** Business risk in selected industries in India. *ARASH*, 5(1), 53-60.
4. **Gupta, A., & Sur, D. (2017).** Business and Financial Risks in Indian Steel Industry: An Empirical Analysis. *Bharatiya Vidya Bhavan Institute of Management Science, Kolkata-97*, 1(2), 18-44.
5. **Kumar, D. M. (2014).** An empirical study on relationship between leverage and profitability in Bata India Limited. *International Journal of Advance Research in Computer Science and Management Studies*, 2(5), 1-9.
6. **Mallik, A.K. and Sur, D. (2009).** Business and Financial Risks in Indian Corporate Sector: An Empirical Analysis in the Post-Liberalisation Era, *The Icfai Journal of Applied Finance*, Vol. 15, No.4, pp.53–68.

7. **Mallick, A. K., Sur, D., & Ganguly, P. (2016).** Business risk in Indian corporate sector: a study of select companies in the post-liberalization era., *Research Bulletin*, 42(2), 33-49.
8. **Mishra, S. D., & Mishra, D. (2007).** Analysis of risk and returns: a study of Indian industrial sector. *International Journal of Indian Culture and Business Management*, 1(1/2), 28-47.
9. **Oviatt, B. M., & Bauerschmidt, A. D. (1991).** Business risk and return: A test of simultaneous relationships. *Management science*, 37(11), 1405-1423.
10. **Singh, K., & Sur, D. (2018).** Analysing company-specific components of business risk in selected manufacturing firms in Indian corporate sector. *International Journal of Risk Assessment and Management*, 21(4), 359-373.
11. **Sur, D., Das, S., & Dey, K. (2006).** Analysis of Business and Financial Risks: A Study of Hindalco Industries Limited. *ICFAI Reader*, IX (12), 53-59.
12. **Sur, D., Mitra, S., & Banerjee, D. (2013).** Business Risk in NTPC Ltd. During the Pre-Liberalization and Post-Liberalization Periods: A Comparative Analysis. *The Management Accountant*, 48(2), 206-12.
13. **Sur, D. (2007).** Business and Financial Risks of NTPC Ltd. in the Pre - and Post-Liberalization Periods: A Comparative Study, *The Icfai Journal of Applied Finance*, Vol. 13, No.10, pp. 66–78.