AN EMPIRICAL ANALYSIS OF HEDGED ITEMS AND DERIVATIVE INSTRUMENTS EMPLOYED FOR HEDGING BY INDIAN COMPANIES

*Mahesh K S, Research Scholar, Department of Studies in Commerce, University of Mysore, P G Centre, Hemagangotri, Hassan 573226 Karnataka, India. maheshks0333@gmail.com

**DR. B. Mahadevappa, Professor, Department of Studies in Commerce University of Mysore, P G Centre, Hemagangotri, Hassan 573226 Karnataka, India. bmahadevappa@gmail.com

Abstract

The current study analyzed various hedging instruments and hedged items employed by Indian companies over five years. The data were collected from the annual reports of sample companies consisting of 19 high foreign revenue companies with significant foreign exchange exposure. The study's findings reveal that most Indian companies are exposed to foreign currency risks, and 95% of companies use derivatives to hedge their foreign currency risk. Additionally, 57% of companies used derivatives to hedge against interest rate risk; however, only two-faced commodity risk. Among the different hedging instruments, forward contracts were the most widely used instruments in Indian companies; 84% of sample companies used forward contracts for managing different types of risks. At the same time, future contracts were the most diminutive preferred hedging instrument among Indian companies.

Keywords: Hedged Items, Hedging Instruments, Indian Companies.

Introduction

In today's rapidly changing world of global finance, derivatives and hedging have become two important risk management tools. It is, therefore, immensely intriguing to investigate how Indian companies use these financial instruments when the country is undergoing fast evolution and moving toward becoming more integrated with the rest of the world. This paper attempts to explore the standard procedures and consequences of using derivative instruments and hedged items for enterprises in India. Economic liberalization and integration of India into the global economy over the last few decades have visibly changed the face of India's financial markets. However, the development of one of the most vibrant markets in the world has brought with it the imperative that Indian business enterprises prudently manage not only these but also

the many other risks relating to international operations that go hand in hand with corporate globalization: fluctuation in foreign exchange, movement in interest rates, changing commodity prices, and market uncertainties. A large variety of risk management tools, such as forwards, futures, options, and swaps, give companies the option to hedge adverse movements in asset prices or interest rates.

Furthermore, beyond traditional financial instruments Indian companies adopt various hedging strategies to hedge a variety of underlying assets, including interest rate, currency, equity, and commodities. Companies can minimize their potential losses by using derivatives through hedging activities and firms can made stabilize cash flows and enhance their competitive position in the market.

Despite the general acknowledgement of the importance of derivative tools and hedging strategies, there is still a lack of literature about their application in the particular context of Indian companies. This research fills the gap by investigating the different types of derivatives and hedged items that Indian companies use in different industries. The study adopts the mixed method approach of the quantitative analysis of the data and qualitative insight into the processes of the companies in the Indian stock market. First, the study investigates which derivative instruments are the most commonly used by Indian companies to hedge their exposure and why they are chosen. Secondly, the study looks at the underlying assets that Indian corporations mostly hedged and how the hedging strategies are effective.

Review of literature

(Bodnar & Gebhardt, 2002) The study compares derivative usage in US firms and German non-financial firms. The findings showed that German firms used derivatives more than their American counterparts. In particular, 78 per cent of German firms were noticed to be using derivatives, while 57 per cent of the US companies were found to be the same. Moreover, the research revealed that the currency derivatives were the most widespread, followed by the interest rate derivatives, which were the same for all the countries. Besides, commodity derivatives were the least favoured by German and US organizations since they held the third far-off place in usage frequency.

(Andrew , Lawrence , & Gary , 2003) The study investigates the use of derivative instruments and financial risk management in economies of different sizes. The research found that a notable increase in the share of firms using hedging practices, whether in large or small economies, has been observed. Particular interest was the data on New Zealand firms that

displayed the same motivations and objectives for using derivatives as those found in vastly larger American and European economies. Moreover, the research also demonstrated similarities in the role of reporting and controlling derivatives transactions among New Zealand companies compared to firms in other countries. The study proposes that, regardless of the size of the economy, a firm's approach to managing derivatives-related activities is homogeneous.

(AGGARWAL & SIMKINS, 2004) The study investigated the nature and determinants of voluntary disclosures regarding currency derivatives usage among large industrial firms in SFAS 107. The research findings indicate that firms with higher-quality voluntary disclosures regarding currency derivatives usage tend to exhibit higher market/book value ratios. This study suggests a positive association between the extent of disclosure and shareholder value. Furthermore, the study observed that higher levels of disclosure were linked to a lower cost of capital, implying potential benefits for firms in terms of reduced financing costs.

(Shiu, 2007) The researcher analyzes the holding of derivatives and factors influencing the use of derivatives by UK insurance companies. The findings reveal that the use of derivative instruments in the insurance industry was limited and exhibited a declining trend over time. Through empirical analysis, this study identified several significant factors associated with general insurers' decisions to employ derivatives. These factors include the insurer's size, liquidity position, exposure to interest rate risk, concentration of business lines, and organizational structure.

(Martin & et al., 2009) The analysis focused on the derivative usage of non-financial firms in Peru and the variables influencing the adoption of derivatives within the country. These findings indicate that the utilization of derivatives in Peru was comparatively low. Moreover, this study identifies two key factors influencing the development of derivatives in the Peruvian market: the level of training in derivatives and the regulatory framework governing the market.

(Selvi & Turel, 2010) The study examined the disclosure practices regarding derivatives usage among non-financial companies in Turkey. The research revealed that most non-financial companies, precisely 86%, utilize derivatives for hedging purposes. the study observed that most of these companies report fair value changes related to derivatives in the profit and loss account rather than applying "hedge accounting." This approach was attributed to the inability of these companies to meet the compulsory criteria outlined in IAS 39, which govern the accounting treatment of derivatives.

(Chang & et al., 2013) The researcher investigated the influence of earnings management on currency derivative usage and its impact. Their study provided powerful evidence that connected the practice of earnings management with the income smoothing as a particular example and the exposure of monetary units to exchange rate risks and the firm-specific adjustment to the change. Moreover, researchers have discovered that this outcome is much more evident in those situations where firms have restricted access to the right currency derivative instruments. Besides, this paper emphasizes the role of currency derivatives in the process of adopting the most suitable risk types management strategies even if firms are unable to obtain these instruments.

(Choi & et al., 2021) The research explores the effects of foreign currency derivative (FCD) utilization on the firm value, emphasizing Bangladeshi non-financial firms. The research result demonstrated a significant effect of using foreign currency derivatives on firm value in Bangladeshi firms. The results showed that the effect of foreign currency derivative usage on firm value differed depending on the firms' export level. The effect is negative for exporters, implying a hedging discount. Conversely, the effect is positive for non-exporters, meaning a hedging premium.

Statement of the Problem

Derivative contracts play a very significant role in financial risk management, but there is a lack of comprehensive understanding of the utilization of derivative instruments among Indian companies. Although derivative instruments are crucially used for the risk management, still there is the possibility to go further in the research on the role of derivative instruments used by Indian companies in hedging. Besides, the key risks which are the biggest threats to Indian companies, and thus, they need to be hedged are the key risks exposed to or hedged hedging strategies by Indian companies that need to be identified. Based on the above, the current study examines in a structured manner: 1. The composition of derivative instruments generally utilized by Indian companies for risk management and 2. Analyze the underlying assets or risks that are hedged against using the instruments. By means of the five mentioned research questions, this study is anticipated to contribute to the existing risk management practices of corporations in India and provide practical guidance to stakeholders in the marketplaces, regulatory frameworks, and corporate decision-making processes. Through the exploration of these research questions, the current study is anticipated to contribute to the existing literature on corporate risk management practices in India. Moreover, the study is expected to offer

actionable insights for participants in financial markets, regulatory paradigms, and corporate decision-making.

Objectives

The study intended to achieve the following objectives

1. To examine the main types of risks or assets hedged by Indian companies using derivative instruments.
2. To identify the types of derivative instruments commonly used by Indian companies for risk management purposes.

Research Methodology

a. Population

The study population comprises all companies listed on the Bombay Stock Exchange (BSE) in 2024, which is recognized as BSE Limited. The BSE is the largest stock market in India. As of January 24, 2024, were 5,309 companies listed on the BSE.

b. Population frame

This study focused on companies listed in the BSE-100 index as the population frame. These companies were categorized based on their total revenue, distinguishing between domestic and foreign sales. The population frame companies were ranked from the highest to the lowest foreign revenue companies using the ratio of foreign revenue to total revenue. Of the initial 100 companies, 28 were excluded due to either unavailability of the latest annual reports or reporting zero foreign revenue. Consequently, the revised population frame consisted of 72 companies.

c. Sample

The study sample comprised the top 19 companies in the population frame. The selection criterion focused on companies with high foreign revenue, which are presumed to possess efficient risk management strategies.

SL No	Company name	Foreign sales %
1	Infosys	97.11
2	HCL Technology	96.95
3	Tata Consultancy Service Ltd	94.9

4	Tech Mahindra Ltd	93
5	Larsen & Toubro Infotech Ltd	92.7
6	Samvardhana Motherson International Ltd	89.22
7	Wipro Ltd	86.39
8	Tata Elxsi Ltd	84.1
9	Divi's Laboratories Limited	82.3
10	Dr. Reddy's Laboratories	82
11	Hindalco Industries Limited	78.28
12	Sun Pharmaceutical Industries Limited	67
13	Cipla Ltd	60
14	United Phosphorus Limited	50.18
15	Torrent Pharmaceuticals Ltd	50
16	Shri Ram Fibres	48.74
17	Bajaj Auto ltd	47.3
18	Vedanta Limited	44.81
19	Adani Enterprises Limited	41.43

d. Source of data and period of the study

The present study primarily used secondary sources of information, with data collected from the annual reports of sample companies using a content analysis methodology. The study period spans five years, covering the period from 2018-19 to 2023-24.

Results and Discussion

Table 1 Sample Companies Using Derivatives to Hedge Against foreign currency risk. (₹ in Crore)

Company name	2018-19	2019-20	2020-21	2022-23	2023-24	Average

INFY	14535	15398	18148	23653	24421	19231
HCLTECH	501.12	781.91	450.4	478.7	971.6	636.75
TCS	169.6	246.3	261.1	269.4	62.8	201.84
TECHM	14033.2	26507.2	21712.6	24903	25355.4	12504.6
LTI	10265.9	16998.1	12964.3	17897.1	37640.2	19153.1
MOTHERSON	1773.4	2206.8	895.7	2763.4	2137.6	1955.4
WIPRO	324441.6	289068.9	299384.2	324289.8	395162.3	326469.4
TATAELXSI	141.9	259.1	213.3	181.6	441.8	247.54
DRREDDY	5250.6	5549.2	10232	9442.9	12206.8	8536.3
HINDALCO	209.5	255.1	216.5	268.1	145.1	218.9
SUNPHARMA	1952.2	1502.2	3651.8	5062.3	9601.8	4354.06
CIPLA	2503.42	3123.26	4515.61	4276.45	6845.17	4252.8
UPL	5390	5875	18028	17177	64212	22136.4
TORNT PHARM	80.41	112.99	117.52	133.18	105.2	109.86
SRF	14.3	31.45	58.79	77.35	67.39	49.9
BAJAJAUTO	93257.5	123124.7	11377.7	11376	0	47827.1
VEDL	10294	12222	10258	9679	12719	11034.4
ADANIENTENT	5,309.11	3,685.17	4,362.47	5,520.73	17,391.09	7253.7

The table provides insights into the use of derivative instruments by various Indian companies for managing foreign currency risk over five years. Foreign currency risk arises from fluctuations in exchange rates, impacting the profitability and financial stability of companies engaged in international trade or foreign operations. Several companies exhibit a notable reliance on derivative instruments for managing foreign currency risk. Companies such as Infosys, Tech Mahindra, Wipro, LTI, and others demonstrate consistent and substantial usage of derivatives over the period, reflecting their exposure to international markets and the criticality of mitigating exchange rate risks.

Table 2: Sample Companies Using Derivatives to Hedge Against Interest Rate Risk (₹ in Crore)

Company name	2018-19	2019-20	2020-21	2022-23	2023-24	Average
HCLTECH	0	25.5	0	0	0	5.1
TECHM	2669.4	1835.1	2669.4	1675	1076.2	1985.02
MOTHERSON	2799.1	2924.3	4212.7	4005.9	3984	3585.2
WIPRO	0	0	0	4750	7216	2393.2
SUNPHARMA	347	753	1068.7	3242.6	3522.8	1786.8
CIPLA	1901.76	2080.79	804.21	0	0	957.4
UPL	14101	13087	14336	9308	0	10166.4
TORNT PHARM	5.8	3.5	0	0	0	4.06
SRF	2.31	1.5	3.1	2.08	0	1.8
VEDL	0	0	0	1735	3261	999.2
ADANIENTENT	978.34	28.09	0	0	0	201.3

Interest rate risk refers to the potential impact of fluctuations in interest rates on companies' financial performance and stability, particularly concerning borrowing costs and investment returns. The table presents the utilization of derivative instruments for managing interest rate risk by Indian companies over five years. Most companies listed in the table, including Infosys, TCS, LTI, Divis Labs, Dr. Reddy's, Hindalco, and Bajaj Auto, demonstrate no reported usage of interest rate derivatives over the period under consideration. This suggests that these companies may not perceive interest rate risk as a significant concern or have alternative strategies to manage such risks.

However, only a few companies selectively use interest rate derivatives. Specifically, Tech Mahindra, Motherson, Sun Pharma, Cipla, UPL, Torrent Pharma, SRF, Vedanta, and Adani Enterprises demonstrate varying degrees of interest rate derivative usage, although not consistently. This indicates that certain companies are more proactive in managing interest rate

risks through derivative instruments, possibly because of their exposure to interest rate-sensitive activities, such as debt financing or investments.

Table 3 Sample Companies Using Derivatives to Hedge Against Commodity/ Precious Metal risk (₹ in Crore)

Company name	2018-19	2019-20	2020-21	2022-23	2023-24	Average
HINDALCO	2372.9	2136.7	3731.3	4224.9	2531.5	2999.5
VEDL	798402	205855	231647	1903886	182557	664469.4

The following table demonstrates how Indian corporations have used derivative instruments to manage commodity price risk for over five years. Commodity price risk refers to the degree of exposure that businesses have to variations in the costs of energy resources, raw materials, and other commodities. These price fluctuations can substantially affect production costs, revenue, and profitability. The data reveal that most of the sampled Indian companies demonstrate minimal or no usage of derivative instruments designed explicitly for managing commodity price risk. Companies such as Infosys, HCL Technologies, TCS, Tech Mahindra, Larsen & Toubro Infotech, Motherson, Wipro, Tata Elxsi, Divi's Laboratories, Dr Reddy's, Sun Pharma, Cipla, UPL, Torrent Pharma, SRF, Bajaj Auto, and Adani Enterprises do not report any usage of commodity derivatives over the period under consideration. Notably, Hindalco and VEDL Industries are the only companies that consistently utilized commodity derivatives over the period analyzed. The company uses commodity derivatives substantially, indicating a proactive approach to managing commodity price fluctuations.

Table 4 Different hedged items used by sample companies (₹ in Crore)

Company name	Hedge against Foreign currency	Hedge against Interest rate	Hedge against Commodity/ Precious Metal
INFY	19231	0	0
HCLTECH	636.75	5.1	0
TCS	201.84	0	0
TECHM	12504.6	1985.02	0

LTI	19153.1	0	0
MOTHERSON	1955.4	3585.2	0
WIPRO	326469.4	2393.2	0
TATAELXSI	247.54	0	0
DIVISLAB	0	0	0
DRREDDY	8536.3	0	0
HINDALCO	218.9	0	2999.5
SUNPHARMA	4354.06	1786.8	0
CIPLA	4252.8	957.4	0
UPL	22136.4	10166.4	0
TORNT PHARM	109.86	4.06	0
SRF	49.9	1.8	0
BAJAJAUTO	47827.1	0	0
VEDL	11034.4	999.2	664469.4
ADANIENTENT	7253.7	201.3	0

The table provides an aggregated overview of the average exposure to various risks hedged by Indian companies, focusing on foreign currency, interest rates, and poverty/precious metal risks. Many companies actively manage foreign currency risk, with some demonstrating very high average exposure. This is especially true for firms in the IT sector and large exporters. Companies with substantial international revenues recorded the highest average exposures, reflecting the critical need to hedge against currency fluctuations to stabilize earnings. Interest rate risk exposure is another crucial area, particularly for companies with significant debt or in interest-sensitive industries. Several companies actively hedge against interest rate risk, although the average exposure levels vary widely. The data indicate that companies with substantial financing needs or significant interest-bearing assets focus on mitigating the impact of interest rate changes to manage financial stability effectively. Commodity price volatility poses significant risks to companies that rely on raw materials or engage in commodity trading.

The data show that a few companies, particularly those in the natural resources and metals industries, exhibit very high average exposures to commodity risk, reflecting the importance of hedging in these sectors. Hedging against commodity price fluctuations is less common among companies outside these sectors, indicating that commodity risk management is highly industry-specific.

Table 5 List of sample companies used of forward contract (₹ in Crore)

Company name	2018-19	2019-20	2020-21	2021-22	2022-23	Average
INFY	8967	9506	12360	14114	15971	12183.6
HCLTECH	368.06	694.45	450.4	478.7	971.6	592.64
TECHM	12504.6	26507.2	21712.6	24903	25355.4	22196.6
LTI	8234.9	9755.1	11375.8	14457.6	33106.3	15385.9
MOTHERSON	1773.4	2206.8	895.7	2763.4	2137.6	1955.4
WIPRO	164203.2	240972.4	270034.6	283338.6	285244.2	248758.6
TATAELXSI	141.9	259.1	213.3	181.6	441.8	247.54
DRREDDY	2405.2	3353.2	5510.9	6900.3	6342.4	4902.4
HINDALCO	150.6	238.3	216.5	268.1	124.7	199.64
SUNPHARMA	1952.2	1502.2	3651.8	5062.3	9601.8	4354.06
CIPLA	2503.42	2669.26	3974.61	3730.75	4659.45	3507.5
UPL	5163	5806	13709	13528	63569	20355
TORNT PHARM	80.41	112.99	117.52	133.18	105.2	109.86
SRF	14.3	31.45	58.79	77.35	67.39	49.9
VEDL	10294	12222	10258	9679	12719	11034.4
ADANIENTENT	5,309.11	3,685.17	4,362.47	5,520.73	17,391.09	7253.7

Table 5 explains how different Indian corporations used forward contracts over five years. Financial instruments called forward contracts are frequently used to hedge against future price

changes, especially interest rates, commodities, and currencies. The use of forward contracts differs across various industry sectors. Technology companies such as Infosys and Tech Mahindra, which have significant global market exposure, strongly rely on forward contracts. On the other hand, companies in sectors such as pharmaceuticals (e.g., Sun Pharma) and metals (e.g., Vedanta) display varying patterns of forward contract usage, reflecting the specific risk profiles and market dynamics of their respective sectors. Some companies, such as TCS and Divi's Laboratories, reported no use of forward contracts throughout the period. This could indicate either a minimal need for hedging or the alternative risk management strategies employed by these companies.

Table 6 List of sample companies used of future contract (₹ in Crore)

Company name	2018-19	2019-20	2020-21	2022-23	2023-24	Average
HINDALCO	2372.9	2136.7	3731.3	4224.9	2531.5	2999.5
VEDL	798402	205855	231647	1903886	182557	664469.4

The table shows information on the use of future contracts by various Indian companies over a five-year period. Most companies listed in the table, including prominent ones such as Infosys, HCL Technologies, TCS, Tech Mahindra, and others, report zero usage of futures contracts throughout the five-year period. This indicates a limited reliance on future contracts for hedging by Indian companies. Among all the samples, only two companies use future contracts: Hindalco and VEDL. Companies operating in commodity-intensive industries may have a greater need for future contracts to hedge against price volatility in raw materials, such as metals, energy, or agricultural products.

Table 7 List of sample companies used option contract (₹ in Crore)

Company name	2018-19	2019-20	2020-21	2021-22	2022-23	Average
INFY	5568	5892	5788	9539	8450	7047.4
HCLTECH	133.06	87.46	0	0	0	44.10
TCS	169.6	246.3	261.1	269.4	62.8	201.84
TECHM	1528.6	0	0	0	0	305.72

LTI	2031	7243	1588.5	3439.5	4533.9	3767.2
WIPRO	160238.4	48096.49	29349.6	40951.2	109918.1	77710.8
DRREDDY	2845.4	2196	4721.4	2542.6	5864.4	3633.9
HINDALCO	0	5	0	0	20.4	5.08
CIPLA	0	454	541	545.7	2185.72	745.3
UPL	227	69	4319	3649	643	1781.4
BAJAJAUTO	93257.5	123124.7	11377.7	11376	0	47827.1

The table displays information on the use of option contracts by different Indian companies over five years. Option contracts are financial instruments that give the right to the holder, but not the obligation, to buy or sell an asset at a predetermined price within a specified timeframe. Companies such as Infosys, LTI, Wipro, Dr. Reddy's, and Bajaj are prominent users of options contracts, with significant amounts reported over multiple years. This indicates a proactive approach to managing specific risks or exploiting opportunities through options. Several companies reported minimal or no usage of option contracts throughout the study period. This suggests either a lack of exposure to the risks typically hedged using options or a preference for alternative risk management strategies.

Table 8 List of sample companies used swaps contract (₹ in Crore)

Company name	**2018-19**	**2019-20**	**2020-21**	**2022-23**	**2023-24**	**Average**
HCLTECH	0	25.5	0	0	0	5.1
TECHM	2669.4	18351	26694	1675	1076.2	10093.1
MOTHERSON	2799.1	2924.3	4212.7	4005.9	3984	3585.2
WIPRO	0	0	0	4750	7216	2393.2
HINDALCO	58.9	11.8	0	0	0	14.14
SUNPHARMA	347	753	1068.7	3242.6	3522.8	1786.8
CIPLA	1901.76	2080.79	804.21	0	0	957.4

UPL	14101	13087	14336	9308	0	10166.4
TORNT PHARM	5.8	3.5	0	0	0	4.06
SRF	2.31	1.5	3.1	2.08	0	1.8
VEDL	0	0	0	1735	3261	999.2
ADANIENTENT	978.34	28.09	0	0	0	201.3

This table illustrates the utilization of swap contracts by various Indian corporations over a five-year period. Swaps involve the exchange of financial instruments or cash flows between the two parties. Some companies, such as Tech Mahindra, Motherson, Sun Pharma, and UPL, have shown significant use of swap contracts in specific years. This suggests a strategic approach for managing financial risks or optimizing cash flow management. Several companies, such as INFY, TCS, LTI, TATAELXSI, and DIVISLAB, have reported zero usage of swap contracts. This indicates either a lack of need for such instruments or a preference for alternative financial instruments for risk management. The horizontal and vertical analyses suggest that Indian companies may not extensively utilize swaps contracts compared to other derivative instruments such as forward and options contracts.

Table 9 Average Hedging Instruments used by Indian companies (₹ in Crore)

Company name	Forward Instruments used	Future Instruments used	Option Instruments used	Swaps Instruments used
INFY	12183.6	0	7047.4	0
HCLTECH	592.64	0	44.10	5.1
TCS	0	0	201.84	0
TECHM	22196.6	0	305.72	10093.1
LTI	15385.9	0	3767.2	0
MOTHERSON	1955.4	0	0	3585.2
WIPRO	248.758.6	0	77710.8	2393.2
TATAELXSI	247.54	0	0	0

DIVISLAB	0	0	0	0
DRREDDY	4902.4	0	3633.9	0
HINDALCO	199.64	2999.5	5.08	14.14
SUNPHARMA	4354.06	0	0	1786.8
CIPLA	3507.5	0	745.3	957.4
UPL	20355	0	1781.4	10166.4
TORNT PHARM	109.8	0	0	4.06
SRF	49.9	0	0	1.8
BAJAJAUTO	0	0	47827.1	0
VEDL	11034.4	664469.4	0	999.2
ADANIENTENT	7253.7	0	0	201.3

The table above provides insights into the overall risk management strategies adopted by Indian companies utilizing forward contracts, futures contracts, option contracts, and swaps. Forward contracts emerged as the most commonly used derivative instrument among the sampled Indian companies, with significant average usage reported across several companies. Companies such as Infosys, Tech Mahindra, LTI, Sun Pharma, and others significantly depend on forward contracts to mitigate risks. However, futures contracts show minimal or no usage among the sampled companies, with only a few exceptions. Vedanta and HINDALCO stand out as companies with substantial average usage of futures contracts, primarily reflecting their exposure to commodity price risks and their hedging strategies in the metals and mining sector.

Option contracts exhibit varying degrees of usage among Indian companies. Companies such as Infosys, TCS, and Wipro demonstrate significant average usage of option contracts, indicating their reliance on these instruments for managing specific risks or exploiting market opportunities. On the other hand, eight companies showed no usage of option contracts. However, the usage of options is relatively limited compared with that of forward contracts. Some sampled companies use swap contracts, but to a lesser extent than forward contracts. Companies such as Tech Mahindra and Motherson show significant average usage of swaps, suggesting their involvement in managing interest rate risks through interest rate swaps. The usage patterns of derivative instruments vary across industry sectors. Information technology

companies, such as Infosys and Tech Mahindra, use forward and option contracts significantly, reflecting their exposure to global markets and currency risks. On the other hand, companies in sectors such as pharmaceuticals (e.g., Sun Pharma, Dr Reddy's) and metals (e.g., Vedanta, Hindalco) exhibit diverse patterns of derivative instrument usage based on sector-specific risk profiles.

Findings

This study examined the risk exposure of Indian companies and found that the majority were exposed to foreign currency risk. Among the 19 companies analyzed, 18 were exposed to foreign currency risk, indicating that 95% used derivatives to manage this risk. Eleven of the 19 companies (57 %) utilized derivatives for interest rate risk. Commodity risk was the least exposed, with only two companies facing this type of risk.

Forward contracts were the common hedging instruments among the sample companies with 84% of them employing this instrument to hedge their risks. Also, 63% of the companies used swaps, 57% used option contracts, and only 10% of the companies used futures contracts to hedge their risk exposure.

Conclusion

This study comprehensively analyses the hedged items and hedging instruments employed by Indian companies over five years. The discoveries show the dominant risk exposure of Indian companies. The foreign exchange risk becomes the most important factor, followed by the interest rate and commodity risk. When it comes to hedging instruments, forward contracts came out as the most popular choice used by 84% of companies. This inclination for forward contracts indicates that Indian companies prefer customized deals that give way to specific terms that meet their risk management needs. Swaps and options were additionally mostly used, whereas 63% and 57% of the companies were resorting to these methods, respectively. Contracts for future delivery of products are the least commonly used which shows that companies are more willing to opt for more versatile and customizable hedging solutions.

The overall findings of this research show the strategic role of derivatives in solving financial risks of Indian companies. This stands for the fact that management should be eager in continuously monitoring and precisely applying hedging instruments in order to hold the sigh of relief from bewildering global financial environments. This information is relevant for

policy makers, financial managers, and other interested parties in the development of more resilient risk management frameworks and practices.

References

AGGARWAL , R., & SIMKINS, B. (2004). EVIDENCE ON VOLUNTARY DISCLOSURES OF DERIVATIVES USAGE BY LARGE US COMPANIES. *Journal of Derivatives Accounting*.

Selvi, Y., & Turel, A. (2010). Derivatives Usage in Risk Management By Turkish Non-Financial Firms and Banks: A Comparative Study. *Annales Universitatis Apulensis Series Oeconomica*.

Shiu, M. Y. (2007). An empirical investigation on derivatives usage: evidence from the United Kingdom general insurance industry. *Applied Economics Letters* .

Andrew , P. K., Lawrence , R. C., & Gary , M. (2003). Derivatives Usage and Financial Risk Management in Large and Small Economies: A Comparative Analysis. *Journal of Business Finance and Accounting*.

Bodnar, G. M., & Gebhardt, G. (2002). Derivatives Usage in Risk Management by US and German Non-Financial Firms: A Comparative Survey. *Journal of International Financial management and Accounting*.

Chang, F. Y., & et al. (2013). A re-examination of exposure to exchange rate risk: The impact of earnings management and currency derivative usage. *Journal of Banking & Finance*.

Choi, S., & et al. (2021). Foreign currency derivative usage and firm value in Bangladesh: comparative analysis between exporters and non-exporters under exchange rate movements. *International Journal of Emerging Markets*.

Martin, M. A., & et al. (2009). Derivative Usage by Non-Financial Firms in Emerging Markets: The Peruvian Case. *Journal of Economics, Finance & Administrative Science*.