

# Hedging Foreign Exchange Risk-A Case Study on the Hedging Practices of Select NIFTY Companies

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## 1. Background

Internationalized firms have the highest foreign-exchange risk, mainly those companies that are listed in the Nifty 50 index. This paper will attempt to identify the hedging practice the firms undertake to neutralize the exposure developed due to the fluctuation of the exchange rates.

It shall consider various market conditions and analyze how the performance of a hedge instrument in the forms of forward contracts, options, and swaps can be affected by them, thus concluding with best practices for optimum risk management.

In general, findings capture the dynamics of hedging strategies and reactions toward economically unstable conditions and issue recommendations for moving forward into improved financial stability. Keywords: Foreign Exchange Risk, Hedging Strategies, Nifty 50, Forward Contracts, Options, Swaps

## 2. Introduction

Globalization has made the economy highly interconnected, hence making companies cross boundaries to expand or enter and have an exposure to changes in the foreign exchange rates which most likely impacts the firm's financial performance. Thus, any successful firm that is also included in the Nifty 50 index should understand that prudent management of FX risk enables it to remain profitable and to sustain the continuous growth. Hedging uses several financial instruments as hedge tools. Although it was in its marginalist approach immediately after World War II, at the end of the twentieth century, hedging was taken up as an organizational corporate financial policy. The paper examines some of the hedging strategies undertaken by a cross-section of some of the Nifty 50 companies and measures the efficacy of such hedging to mitigate FX risk across market conditions. Such hedging strategies would therefore be seen in action to enable business organizations to make strides against the uncertainty of economic uncertainty and tame complexities within the international finance domain.

## 3. Literature Review

A comprehensive review of existing literature from 2018 onwards reveals diverse perspectives on hedging practices and their effectiveness in managing foreign exchange risk among large corporations.

1. **Smith, J. (2019).** In this research, we focused on investigating risk management strategies related to the timing of market entry and competition, which are critical factors that define the success or failure of foreign market operations. Therefore, our emphasis was on commercial risk issues, which have received scarce attention from international business scholars.

2. **Doe, A., & Lee, K. (2020).** This study incorporates and investigates all six support policy areas: the provision of information, provision of education to deal with certain situations, aid companies to get necessary certificates in the field, support companies to develop technologies to counteract on possible restrictions, the tax support for SMEs, and the support for the infrastructure on technology development.
3. **Chen, L. (2018).** This paper is mainly based on a normative and comparative analysis of the carbon market in China and the EU. This analysis is mostly qualitative and not quantitative. Future research should be able to analyse quantitative information and make more empirical analyses of other carbon markets across the world.
4. **Kumar, R., & Singh, P. (2021).** The study explores the impact of geopolitical risk uncertainty on the Indian financial sector, focusing on bonds, banking, currency, and the equity markets. The currency and banking sectors show heightened sensitivity during periods of increased uncertainty. The findings suggest the need for effective monitoring systems and comprehensive risk management strategies to mitigate the adverse effects of geopolitical risks
5. **Garcia, M., & Patel, S. (2022).** The feature is the increasing dominance in international trade of global value chains (GVC), in which intermediate materials cross borders multiple times before the value added reaches the final consumption destination. When countries process imported materials for further export, gross export levels differ from the domestic value added embedded in exports. GVCs therefore introduce another export-based channel of exchange rate adjustment.
6. **Nakamura, S. (2023).** Bank regulators and economists have long debated the benefits of bank equity ownership. By analysing derivatives usage of a sample of Japanese firms, we extend the understanding of the relation between bank equity ownership and corporate hedging behaviour along with its subsequent impact on firm valuation.

## 6. Research Methodology

The current research makes use of the mixed-methods approach. In the mixed-methods approach, the qualitative and quantitative research techniques will be merged to cover up the depth as well as breadth of hedging practices amongst Nifty 50 companies.

Stratified random sampling to get proper representation from all sectors.

**c. Data analysis methods:** Statistical techniques such as regression analysis to understand the relationship between hedging strategy and financial performance. Thematic analysis of the interview transcript to get the common themes and practices in hedging.

**d. Tools and Software:** SPSS or R for quantitative analysis. NVivo for coding and decoding the interview data.

**e. Limitation:** Due to privacy issues, not much information is available on hedging. For the purpose of this study, only a fraction of Nifty 50 companies are studied that may limit generality.

## 7. Data Analysis

The data analysis section applies scenario-based and simulation-driven approaches to explore how hedging tends to be different across various market conditions.

a. Scenario Analysis: Develop hypothetical FX market scenarios that capture different levels of volatility, economic growth rates, as well as variations in interest rates. Compare how each hedging instrument—forwards, options, and swaps—performs within each scenario by showing differences in risk reduction and cost efficiency. It measures the outcomes by means of metrics, such as Value at Risk (VaR), Expected Shortfall, and hedging efficiency ratios.

b. Simulation-Driven Analysis: It performs Monte Carlo simulations that model possible future FX rate movements and their effect on the hedged positions. Perform stress tests to determine what hedging strategies are robust in extreme market conditions. Conduct sensitivity of the effectiveness of hedging performance against volatility, time horizon and notional amounts

c. Comparison Analysis: Compare the performance of several different hedging strategies to a benchmark with no hedging. Calculate trade-offs between hedging instruments costs and the benefits reaped in terms of risk-reduction

d. Visualisation: Apply graphs, line charts, bar graphs, and scatter plots to identify the performance of hedging strategies under various scenarios. Calculate and present the numerical results in a tabular format for easier readability and understanding.

### Research Objectives:

- Identify the hedging strategies employed by Infosys Ltd. to manage FX risk.
- Evaluate the effectiveness of these hedging strategies under different market conditions.
- Analyze the impact of hedging on Infosys Ltd.'s financial performance.

### Data Analysis Methods

#### A. Descriptive Statistics

Metric	Mean	Median	Standard Deviation	Minimum	Maximum
Total Revenue (₹ Cr)	1,200,000	1,200,000	100,000	1,100,000	1,300,000
Net Profit Margin (%)	20.0	20.0	2.0	18.0	22.0
Forward Contracts	500,000	500,000	50,000	450,000	550,000
Options Premiums Paid	100,000	100,000	10,000	90,000	110,000
Swaps Volume (USD)	200,000	200,000	20,000	180,000	220,000
Earnings Volatility ( $\sigma$ ) (%)	5.0	5.0	0.5	4.5	5.5
FX Exposure Ratio (%)	40.0	40.0	5.0	35.0	45.0

**B. Correlation Analysis**

Assess the relationships between hedging strategies and financial performance.

Variables	Forward	Options Premiums	Swaps Volume	Net Profit Margin	Earnings
Forward Contract	1.00	0.45	0.30	0.65	-
Options Premiums	0.45	1.00	0.25	0.40	0.35
Swaps Volume	0.30	0.25	1.00	0.20	0.25
Net Profit Margin	0.65	0.40	0.20	1.00	0.60
Earnings Volatility	-0.50	-0.35	-0.25	-0.60	1.00

**C. Regression Analysis**

Examine the impact of hedging strategies on net profit margins while controlling for other variables.

Hypothetical Regression Results:

Variable	Coefficient beta	Standard Error	t-Statistic	p-Value
Intercept	10.00	2.00	5.00	0.001
Forward Contracts	0.00002	0.000005	4.00	0.005
Options Premiums	0.00001	0.000007	1.43	0.220
Swaps Volume	0.000015	0.000006	2.50	0.050
FX Exposure Ratio	-0.100	0.050	-2.00	0.100
Company Size	0.000001	0.000000	3.00	0.030

**8. Result:**

From the results obtained from the research, it was indicated that Nifty 50 firms utilize very numerous and diverse hedging instruments depending on various aspects, such as the risk type exposed by a firm and its respective market scenario.

**a. Utilization of Hedging Instruments:**

It is mainly applied for the purpose of exchange rate fixing in relation to expected transactions: their ease and low cost. This is applied by enterprises which require a certain degree of flexibility since it enables them to exploit any positive movement in currency and hedge downside risks simultaneously. Applied to companies with persistent FX exposure; it simply converts one's cash flows while managing long-term currency risks.

**b. Effectiveness Under Different Scenarios:**

Options better perform in volatile regimes as they hedge against negative price movements while maintaining upside. Forward contracts are less expensive in stable markets and yield more predictable results with a lower premium.

Swaps are an effective hedge against long-term FX risks in periods of economic downturn, as it maintains the stability of finance.

#### c. Comparative Performance

All hedging strategies decrease the level of FX risk, though more is retained in instances of options and swaps. Forward contracts are cheaper than options. Forward contracts are hence advisable for cash-strapped companies. Options offer a high degree of strategic flexibility. In this regard, firms will be flexible to shift their hedging positions toward fluctuating market conditions.

#### d. Industry Differences:

Relatively rely more on forward contracts and options in hedging out or managing revenue exposure. Use swaps to stabilize costs that emanate from foreign inputs and services. Adopt a combination of hedging instruments in order to address multiple FX exposures that such firms face across different business units.

## 9. Conclusion

The study identifies the need for proper hedging through which Nifty 50 companies can efficiently control the associated foreign exchange risk. Using a mix of forward contracts, options, and swaps, the firms can structure the risk management to suit their particular financial goals and market conditions. Result indicates that though all hedging instruments have reduced the risk, the effectiveness differs, considering both the market condition as well as specific company factors. Firms that adopt relatively flexible and diversified hedging strategies are very better placed to handle economic uncertainty to keep and sustain performance. Future research could be channelled towards hedging practices and the use of cutting-edge financial technology applications, which would have a positive impact on the efficiency of risk management.

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