Managing USD–INR Exposure: Cost Sensitivity, Profit Impact, and Hedging Performance

An Independent Research Project
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AUTHOR'S DECLARATION

I hereby declare that this study titled **"Managing USD–INR Exposure: Cost Sensitivity, Profit Impact, and Hedging Performance"** is an independent and original study carried out by me. This study has been undertaken for personal learning and analytical purposes and has not been submitted to any institution or organization for academic credit.

All data used in this study have been obtained from publicly available secondary sources. The analysis, interpretations, and conclusions presented in this report are based solely on my own understanding and effort.

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EXECUTIVE SUMMARY

Import-dependent manufacturing firms operate in a business environment where a significant portion of production cost is denominated in foreign currency, while revenues are earned in Indian Rupees. This structural mismatch exposes such firms to continuous exchange rate risk. Movements in the USD–INR rate directly affect the INR value of imported inputs, altering production cost and profitability even when operations remain unchanged. In competitive markets with limited pricing flexibility, this volatility can materially weaken margins and disrupt financial planning.

This analysis examines how USD–INR exchange rate volatility affects cost and profitability in an import-dependent manufacturing company. A structured financial model is developed using a realistic cost structure, fixed production volume, and constant selling price. Monthly exchange rate paths are applied under three scenarios Base, Favourable, and Adverse derived from an ETS-based forecast framework. The model evaluates performance on both an unhedged and a partially hedged basis, where 50% of foreign currency exposure is protected using a forward contract. The analysis is conducted over a full calendar year at monthly and quarterly levels.

The results demonstrate that exchange rate movement alone is sufficient to alter the firm's cost base and profit profile. In the unhedged position, total production cost fluctuates across months and shifts upward under adverse currency conditions. These cost changes flow directly into the income statement, making profit externally driven. Even under normal market conditions, routine currency movement introduces earnings instability. Under adverse conditions, margin compression becomes sustained and severe, reshaping quarterly performance and weakening budget reliability.

Profit analysis confirms that unhedged earnings are highly sensitive to currency movement. Favourable conditions generate higher profit but with uneven growth across periods, while adverse conditions produce sharp and persistent erosion. Worst-period analysis reveals that the unhedged structure exposes the firm to deep downside outcomes, even without any operational failure. Quarterly aggregation does not eliminate this risk; instead, it concentrates currency effects into uneven financial performance across periods.

Introducing partial hedging fundamentally changes this behaviour. By fixing half of the foreign currency exposure, the firm reduces cost uncertainty and raises the earnings floor. Under Base and Adverse scenarios, hedged performance consistently exceeds unhedged

results across all quarters. Worst-period outcomes improve materially, indicating meaningful downside protection. Although hedging limits full participation in prolonged favourable currency movement, it transforms profit behaviour from irregular and externally driven to structured and predictable.

Volatility analysis quantifies this effect. In the unhedged position, profit exhibits wide swings across quarters in all scenarios. Hedging compresses this range by approximately 50 percent, directly in line with the proportion of exposure protected. This confirms that hedging does not aim to maximise profit; its purpose is to control uncertainty. It reshapes earnings from a volatile, market-driven outcome into a manageable financial variable.

The study establishes that exchange rate risk is not a peripheral macroeconomic concern but a core operational and financial risk for import-dependent firms. Left unmanaged, it alters cost structure, destabilises margins, and weakens managerial control over performance. Managed systematically, it becomes measurable and controllable. A partial hedging strategy, supported by scenario-based planning and regular FX monitoring, enables firms to preserve margin discipline, stabilise earnings, and plan with confidence in uncertain currency environments.

This analysis provides a practical framework for understanding how currency movement flows through cost and profit, and how risk management decisions reshape financial outcomes. It demonstrates that effective exchange rate management is not a treasury formality it is a central component of modern financial strategy in import-driven businesses.

CHAPTER 1

BUSINESS BACKGROUND

1.1 INTRODUCTION – USD–INR AND IMPORT-BASED BUSINESS CONTEXT

In an increasingly globalized economy, businesses are no longer confined to domestic sources of raw materials. Indian manufacturing companies regularly import critical inputs such as metals, chemicals, electronic components, machinery parts, and energy-linked materials from international markets. These imports are typically invoiced in United States Dollars (USD), making the USD–INR exchange rate a key financial variable for many firms.

The USD–INR rate represents the value of the Indian Rupee relative to the US Dollar. Any movement in this rate directly affects the INR cost of imported goods. When the Rupee depreciates, the same quantity of imported material becomes more expensive in INR terms. When the Rupee appreciates, import costs decline.

Exchange rates are shaped by a wide range of macroeconomic forces operating at both domestic and global levels. Movements in global interest rates influence capital flows, as investors shift funds toward currencies offering higher returns. Trade balances and cross-border capital movements affect the demand and supply of foreign currency, thereby impacting exchange rates. Inflation differentials between countries alter relative purchasing power, leading to long-term currency adjustments. Geopolitical developments such as conflicts, policy uncertainty, and economic sanctions often trigger volatility in currency markets. In addition, commodity price cycles play a significant role, particularly for import- and export-dependent economies, as changes in global commodity prices directly influence foreign exchange requirements and currency valuation.

These factors are largely external to individual firms and cannot be controlled by management. As a result, companies operating in import-dependent industries face an inherent financial uncertainty.

For manufacturing firms that operate on cost-based pricing and thin margins, even small movements in exchange rates can have a material impact on profitability. Since selling prices are often constrained by competition and customer expectations, sudden increases in input cost cannot always be passed on immediately. This makes exchange rate volatility a direct threat to margins and earnings stability.

Therefore, in import-intensive sectors, foreign exchange exposure is not a Minor concern it is a core financial risk that directly affects cost structure, pricing power, and profitability. Understanding and managing this risk is an essential function of modern financial management.

1.2 COMPANY OVERVIEW

The study is based on a simulated mid-sized manufacturing company operating in India, designed to reflect the structure and financial behaviour of a real-world import-dependent firm. The company manufactures finished industrial components for domestic customers and generates revenue entirely in Indian Rupees.

A significant portion of its raw materials and critical components is sourced from overseas suppliers and invoiced in United States Dollars. The remaining cost components such as labour, manufacturing overheads, administrative expenses, and selling costs are domestic in nature and incurred in INR.

This operating structure creates a clear currency mismatch between revenues and costs. While income remains fixed in INR, a part of the cost base fluctuates with movements in the USD–INR exchange rate. The company therefore carries inherent foreign exchange exposure at the operating level.

The firm operates in a competitive manufacturing environment where frequent changes in selling prices are not feasible. Prices are influenced by market competition, customer contracts, and industry norms. As a result, increases in input costs caused by currency depreciation cannot be immediately passed on to customers, making margins sensitive to exchange rate movements.

The company does not benefit from natural hedges such as export revenue in foreign currency. Its exposure is therefore one-sided: adverse currency movements increase costs, while favourable movements provide only limited and uncertain benefit. This makes foreign exchange risk a material financial concern for management and positions the firm as an appropriate representation of an import-dependent manufacturing business.

1.3 NATURE OF FOREIGN EXCHANGE EXPOSURE

The company's foreign exchange exposure arises from its recurring obligation to settle import payments in US Dollars while generating all operating revenue in Indian Rupees. This creates a transactional exposure that is both continuous and unavoidable. Each procurement cycle converts a business operation into a financial risk event, where the final rupee cost of raw materials is determined not at the time of order, but at the time of payment.

The exposure is structural rather than incidental. Imports are not occasional purchases; they are embedded into the production process. As a result, the firm is permanently long on USD any depreciation of the rupee increases its cost base, while appreciation provides relief. There is no offsetting inflow in foreign currency, no export revenue, and no natural hedge within operations. The exchange rate therefore acts as an external cost driver beyond managerial control.

From a financial standpoint, this exposure converts currency movement into margin volatility. A change of even ₹1 in the USD–INR rate directly alters the rupee value of the ₹300 import-linked cost component. Over a monthly or quarterly production cycle, this translates into measurable swings in operating profit, even when sales volume and pricing remain unchanged. The business may perform identically in operational terms, yet report materially different financial outcomes purely due to currency movement.

This form of exposure is particularly challenging because it is asymmetric. Rupee depreciation has an immediate and adverse impact on profitability, while appreciation offers limited strategic benefit. Competitive market conditions often prevent the firm from raising prices in response to higher costs, whereas cost savings from a stronger rupee are frequently absorbed by market-driven price pressures. The risk therefore has more downside weight than upside potential.

In this context, foreign exchange becomes not just a treasury concern but a core operating risk. It influences budgeting accuracy, quarterly performance predictability, and management's ability to commit to pricing and margin targets. Without a defined policy, the company's earnings trajectory becomes partially governed by macroeconomic forces rather than business performance. This characteristic makes FX exposure a central financial variable in the company's planning and control framework.

1.4 IMPORTANCE OF FX RISK IN FINANCIAL MANAGEMENT

For an import-dependent manufacturing company, foreign exchange risk is not a peripheral treasury issue it is a core financial management concern that directly affects cost control, profitability, and performance stability. Unlike operational risks that can be mitigated through efficiency or process improvement, FX risk originates outside the firm and operates independently of managerial effort. Yet its impact is reflected in the income statement with the same force as any internal cost variance.

From a budgeting and planning perspective, exchange rate uncertainty weakens the reliability of cost forecasts. Annual budgets may be prepared using a reference rate, but actual cash outflows for imports are realized at market rates that fluctuate daily. This creates persistent variance between planned and actual costs, complicating margin targets, pricing decisions, and working capital planning. A business that appears profitable on paper can experience earnings pressure in execution purely due to currency movement.

Quarterly performance evaluation is also affected. Management may achieve production, sales, and efficiency targets, yet report lower-than-expected profits because of adverse exchange rate movement. This distorts performance measurement and makes it difficult to distinguish between operational underperformance and macro-driven financial drag. Over time, such volatility reduces earnings predictability an attribute that is increasingly valued by lenders, investors, and strategic partners.

Hedging therefore becomes a strategic financial choice rather than a speculative activity. The objective is not to maximize gains from favourable currency movements, but to protect operating margins and stabilize cash flows. By partially fixing the cost of imports, the firm converts an uncertain variable into a controlled financial parameter. This allows management to plan with greater confidence, commit to pricing structures, and evaluate business performance on operational merit rather than currency luck.

In this framework, FX risk management supports three core financial goals: margin protection, earnings stability, and planning reliability. It aligns currency exposure with the firm's risk appetite and transforms exchange rate volatility from an uncontrolled threat into a managed financial dimension. For an import-driven manufacturer, this discipline is not optional it is integral to sustainable financial performance.

1.5 RESEARCH FRAMEWORK

Statement of the Problem

An increasing number of Indian manufacturing firms rely on imported raw materials and components that are priced in US Dollars while earning revenue in Indian Rupees. This structural mismatch exposes operating margins to fluctuations in the USD–INR exchange rate. Despite stable production volumes and consistent sales performance, these firms experience unpredictable cost behaviour and profit variability driven by currency movement.

In many cases, exchange rate impact is treated as an external disturbance rather than a measurable business variable. Budgeting is often performed using a single reference rate, and deviations are absorbed as "market effects" without systematic analysis. As a result, management lacks clear visibility into how much of the profit fluctuation is caused by operational performance and how much is purely due to foreign exchange movement.

The absence of a structured financial framework for isolating and measuring FX impact leads to reactive decision-making. Pricing adjustments are delayed, cost overruns are rationalized, and hedging if used is frequently based on intuition rather than quantified risk exposure. This creates a gap between operational control and financial outcomes.

The core problem addressed by this study is the lack of a practical, model-driven approach to evaluate how USD–INR volatility alters cost and profitability in an import-dependent manufacturing environment and how hedging can be used as a financial stabilizing mechanism rather than a speculative tool.

Need of the Study

In an environment where exchange rates fluctuate continuously, import-dependent manufacturers operate under a layer of financial uncertainty that is often underestimated. While production efficiency, procurement discipline, and sales performance are closely monitored, the impact of currency movement on cost and profitability is frequently treated as an uncontrollable external factor rather than a variable that can be measured and managed.

This creates a gap in financial visibility. Management may observe margin erosion or unexpected profit swings without a clear understanding of how much is caused by operational performance and how much is driven purely by exchange rate movement. Without this distinction, corrective actions tend to be misdirected cost controls are tightened, performance pressure is increased, or pricing strategies are altered, even when the underlying cause is macroeconomic rather than operational.

The need for this study arises from the absence of a practical, business-oriented framework that translates foreign exchange volatility into quantifiable financial outcomes. While it is widely acknowledged that rupee depreciation increases costs, such general awareness is insufficient for managerial decision-making. Firms require precise answers to operational questions such as how a ₹1 movement in the USD–INR rate affects quarterly profitability, how unhedged import exposure amplifies earnings volatility, and to what extent hedging strategies can stabilize margins without completely eliminating potential upside. By addressing these dimensions, the study bridges the gap between macroeconomic currency movements and firm-level financial performance, enabling managers to evaluate exchange rate risk in concrete, measurable terms.

By translating exchange rate movement into cost behaviour, profit variation, and volatility metrics, the study addresses this informational gap. It enables FX risk to be evaluated in the same financial language as any other business variable cost, margin, and earnings stability.

For finance managers, this provides a basis for structured decision-making in budgeting, forecasting, pricing discipline, and risk policy formulation. Instead of reacting to currency movement after it impacts results, management gains the ability to anticipate, simulate, and financially prepare for it.

The study is therefore needed to shift FX risk from being a vague macro concern to a measurable and manageable financial dimension within the firm's planning and control system.

Scope of the Study

This study is confined to analysing the financial impact of USD–INR exchange rate movements on an import-dependent manufacturing company operating in India. The firm is modelled as a domestic producer with all revenues denominated in Indian Rupees and a defined portion of its cost structure linked to dollar-denominated imports. The scope is intentionally designed to reflect the financial realities of a typical mid-sized Indian manufacturer rather than the complexities of a multinational corporation.

The analysis focuses exclusively on transaction exposure arising from recurring import payments. Other forms of foreign exchange exposure, such as translation risk associated with overseas subsidiaries or economic exposure from global competitive positioning, are outside the scope of this project. The study also assumes stable operational performance, meaning that production volumes, selling prices, and internal efficiency remain constant across scenarios. This allows exchange rate movement to be isolated as the sole driver of financial variation.

The financial model operates on a monthly and quarterly basis and evaluates three exchange rate scenarios base, favourable, and adverse derived from time-series forecasting. Each scenario is examined under two financial strategies: fully unhedged and partially hedged. The hedging framework is limited to a 50 percent forward cover at a fixed reference rate, designed to represent a practical and conservative treasury policy.

The scope of the study encompasses the measurement of import cost variations under alternative USD–INR exchange rate paths and the resulting impact on monthly and quarterly operating profits. It further includes a comparative analysis of earnings behaviour under unhedged and hedged exposure scenarios, enabling an assessment of how currency risk translates into financial instability. The study also identifies worst-period loss exposure arising from adverse exchange rate movements and evaluates overall profit volatility, along with the extent to which hedging mechanisms can reduce such volatility. Through this framework, the analysis provides a comprehensive view of how exchange rate fluctuations affect cost structures and profitability in an import-dependent manufacturing firm.

The study does not attempt to predict future exchange rates with certainty, nor does it evaluate speculative trading strategies. Its purpose is analytical rather than predictive. The scope is deliberately bounded to ensure that conclusions remain financially interpretable and directly relevant to managerial decision-making in an import-driven manufacturing context.

Objectives of the Study

1. Measure the effect of USD–INR movement on import-linked production costs.
2. Evaluate the impact of exchange rate volatility on monthly and quarterly operating profit.
3. Compare profit behaviour under unhedged and partially hedged positions.
4. Estimate downside risk through worst-period loss analysis.
5. Assess earnings volatility and the extent of volatility reduction through hedging.
6. Support managerial decisions in budgeting, pricing, and FX risk management.

CHAPTER 2
DATA & ASSUMPTIONS

2.1 SCOPE OF DATA AND MODELLING FRAMEWORK

This study is based on a structured financial model developed to simulate the operating performance of an import-dependent manufacturing company under varying exchange rate conditions. The model integrates cost structure, production volume, selling price, and exchange rate movements to translate currency fluctuations into measurable financial outcomes.

The data used in the model consists of:

- A standardized per-unit cost structure representing a typical manufacturing operation
- A fixed annual production and sales volume
- A constant selling price in INR
- Monthly USD–INR exchange rate paths derived from forecasting models
- Scenario paths representing base, favourable, and adverse currency conditions
- A defined hedging policy applied to a portion of foreign currency exposure

The modelling framework is designed to isolate the pure effect of exchange rate movements on cost and profitability. All non-currency variables such as volume, efficiency, and pricing are held constant across scenarios. This ensures that any variation in financial performance arises solely from changes in the exchange rate.

The time horizon of the analysis is one calendar year, structured on a monthly and quarterly basis. This aligns the model with real-world exchange rate data, which is typically observed and forecasted in calendar-month terms.

By fixing operational parameters and allowing only the exchange rate to vary, the model creates a controlled environment in which the financial sensitivity of the business to USD–INR movements can be measured with clarity and precision.

2.2 KEY OPERATING ASSUMPTIONS

To ensure clarity, consistency, and control within the analysis, the model is built on a defined set of operating assumptions that represent a realistic mid-sized manufacturing firm. These assumptions remain constant across all scenarios so that the impact of exchange rate movement can be isolated without interference from changes in volume, efficiency, or pricing.

The company is assumed to operate on a calendar-year basis, with production and sales distributed evenly across twelve months.

- Annual production and sales volume: 100,000 units
- Monthly volume: Approximately 8,333 units

The firm sells its finished product at a fixed price of ₹1,000 per unit. This reflects a competitive manufacturing environment where frequent price revisions are impractical.

The cost structure is defined on a per-unit basis and then converted into monthly operating cost using the assumed monthly production. The cost sheet used in the model reflects a realistic manufacturing setup and is shown below.

COST HEAD	PER UNIT	MONTHLY COST
Direct Materials	500	41,66,667
Direct Labour	80	6,66,667
Manufacturing OH	150	12,50,000
Administrative OH	70	5,83,333
Selling & Distribution OH	100	8,33,333
TOTAL COST	**900**	**75,00,000**

Figure 2.1: Monthly Cost Sheet

The company's cost structure is defined on a per-unit basis and extended into monthly operating values based on the assumed production volume. The cost sheet reflects a realistic manufacturing environment and distinguishes between material, labour, and overhead components.

Based on the assumed monthly production volume, the per-unit costs are translated into monthly operating expenses. This allows the model to evaluate foreign exchange impact not only at a unit level, but also in terms of monthly and quarterly financial performance, which aligns with how management monitors profitability.

Out of the total direct materials cost of ₹500 per unit, ₹300 represents expenditure on imported raw materials and components, while the remaining ₹200 corresponds to domestically sourced inputs. This cost structure indicates a high degree of import dependence, making the firm's production cost and profitability highly sensitive to movements in the USD–INR exchange rate.

Only the ₹300 import-linked portion is exposed to USD–INR movement. All other cost heads including the domestic material portion, labour, overheads, administration, and selling expenses are fully INR-based and remain constant across all scenarios.

The base exchange rate for the model is set at USD–INR 87. This rate is derived from the average exchange rate of the 2025 calendar year. Using the annual average provides a realistic "normal" operating level rather than an extreme market point.

This structure creates a stable operating baseline. With production volume, selling price, and all domestic costs held constant, any variation in cost and profit across scenarios arises only from the revaluation of the ₹300 import-linked material cost under different USD–INR levels. These assumptions represent a stable operating environment and serve as the baseline for scenario-based analysis.

2.3 EXCHANGE RATE SCENARIOS

The analysis is based on monthly average USD–INR exchange rates for the calendar year. Using monthly averages aligns the model with how exchange rate data is typically observed and how companies plan costs and budgets in practice.

Three exchange rate scenarios are constructed to reflect different market conditions:

1. **Base Scenario** – Represents the most likely exchange rate path. This path is derived from an Exponential Smoothing (ETS) forecasting model developed in a separate exchange-rate forecasting project and reused here as the base input for financial analysis.

2. **Favourable Scenario** – Represents a situation where the Rupee performs better than expected. This path is based on the lower confidence bound of the ETS forecast and reflects a relatively stronger INR environment.

3. **Adverse Scenario** – Represents a situation where the Rupee weakens more than expected. This path is based on the upper confidence bound of the ETS forecast and reflects a higher USD–INR environment.

Each scenario provides a full set of monthly average exchange rates for the year. These monthly values are applied to the import-linked portion of cost, while all other operating variables volume, price, and domestic costs remain unchanged.

2.4 HEDGING ASSUMPTIONS

To evaluate how foreign exchange risk can be managed, the model includes a simple and realistic hedging policy. The company is assumed to hedge 50% of its import-related USD exposure using a forward contract arranged through a commercial bank.

Under this policy, 50 percent of the import-linked USD requirement is covered through a forward contract at a fixed exchange rate of USD–INR 88, while the remaining 50 percent is left unhedged and continues to fluctuate in line with the prevailing market exchange rate. This structure allows the firm to partially stabilize its cost base while still retaining exposure to potential favourable currency movements.

In practice, this reflects how companies manage currency risk. The firm approaches its bank and enters into a forward contract, agreeing today to purchase a fixed amount of USD at a predetermined rate for future import payments. No physical exchange takes place at the time of signing; only the rate is locked for settlement on the payment date.

Most manufacturing firms do not hedge their entire foreign exchange exposure. Instead, they adopt partial hedging strategies to protect themselves against sharp currency depreciation while maintaining operational and financial flexibility. Such an approach enables firms to limit downside risk during adverse exchange rate movements, yet retain a portion of the potential benefit if the currency moves favourably. Partial hedging therefore represents a balanced risk management strategy, aligning cost stability with the opportunity to participate in positive currency trends.

The model therefore represents a balanced treasury policy in which the company secures cost certainty for a portion of its imports while keeping the remainder exposed to market movement.

The forward rate is assumed to remain constant throughout the year, representing a simple annual hedging strategy. This allows the financial impact of hedging to be measured clearly and compared against the unhedged case without introducing unnecessary complexity.

2.5 SUMMARY OF MODELLING BOUNDARIES

- The model focuses only on the impact of USD–INR movement on cost and profitability.
- Production volume is assumed to remain constant throughout the year.
- Selling price is fixed and does not change across months or scenarios.
- Operational efficiency is treated as stable with no productivity variation.
- All domestic cost components are assumed to remain constant.
- No changes in product mix or market demand are considered.
- Only the import-linked material cost is affected by exchange rate movement.
- The effect of currency risk is isolated from other business variables.
- These simplifications are intentional and help measure the pure financial impact of exchange rate volatility.

CHAPTER 3
METHODOLOGY AND FINANCIAL MODEL DESIGN

3.1 OVERVIEW OF THE MODELLING APPROACH

The purpose of the financial model is to convert exchange rate movement into measurable changes in cost and profitability. Instead of treating currency fluctuation as an abstract risk, the model translates each movement in USD–INR into its direct impact on production cost and operating profit.

The approach is built on three principles:

- Only the import-linked portion of cost is exposed to exchange rate movement
- All other operating variables remain constant
- Profit changes are driven purely by currency movement and hedging decisions

For each month of the calendar year, the model applies the corresponding exchange rate to the import-linked cost. This revised cost is then combined with fixed domestic costs to compute total production cost. From this, profit per unit and total operating profit are derived.

The same structure is applied across all scenarios and for both unhedged and hedged positions. This ensures that every result remains directly comparable across scenarios, and that any observed differences in profitability arise solely from variations in the exchange rate path and the presence or absence of hedging. By holding all other operational and cost parameters constant, the analysis isolates the pure financial impact of currency movements and risk management decisions.

By following a consistent and controlled structure, the model replicates how a corporate finance team evaluates foreign exchange exposure by isolating the risk factor, applying it systematically, and observing its effect on financial performance over time.

3.2 HOW EXCHANGE RATE AFFECTS COST

The core function of the model is to convert exchange rate movement into changes in production cost. This is achieved by isolating the import-linked portion of material cost and revaluing it using monthly USD–INR rates. For each month, the model performs three steps.

1. The import-linked cost is expressed in foreign currency terms based on the base operating structure.
2. The relevant monthly exchange rate is applied to this foreign currency value.
3. The revised import cost is combined with fixed domestic costs to obtain the new total production cost.

This process ensures that only the portion of cost exposed to foreign exchange is affected by currency movement, while all domestic components remain unchanged.

By repeating this process for every month across all scenarios, the model produces a time series of production costs under varying exchange rate conditions. These cost values form the foundation for all subsequent profit calculations.

This structure reflects how exchange rate movement affects real businesses: physical operations remain unchanged, but the currency value of imported inputs fluctuates, altering total cost and, in turn, profitability.

3.3 CONVERSION OF COST INTO PROFIT

Once the revised production cost is obtained for each month, the model converts this cost into operating profit in a direct and transparent way.

The selling price of the product remains fixed throughout the year. Therefore, any change in profit arises only from changes in cost. For each month:

- The revised total cost per unit is deducted from the fixed selling price
- This produces the profit per unit under the given exchange rate
- The profit per unit is then multiplied by the monthly production volume
- This results in monthly operating profit

By repeating this process for each month, the model generates a complete annual series of profit values under every exchange rate scenario. This structure closely mirrors real business behaviour, as operational volume and output remain constant, market selling prices are held unchanged, and only the cost of imported inputs varies in response to currency movements.

Profit therefore adjusts automatically as a consequence of exchange rate changes, allowing the model to isolate and capture the pure financial impact of USD–INR fluctuations on firm performance. The model therefore shows how exchange rate movement flows through the cost structure and finally appears in the income statement as a change in operating profit.

By operating at both per-unit and monthly aggregation levels, the model enables management to observe how exchange rate movements alter margins at the individual product level and how these micro-level changes accumulate into monthly and quarterly financial outcomes. This dual-layer structure bridges operational economics with financial performance, allowing decision-makers to trace the transmission of currency risk from unit cost to overall profitability.

3.4 SCENARIO APPLICATION AND TIME STRUCTURE

The model operates on a monthly time frame over a full calendar year. Each exchange rate scenario Base, Favourable, and Adverse provides a complete set of monthly USD–INR values for the same period.

For every scenario, the same sequence of steps is followed:

- Monthly exchange rates are applied to the import-linked cost
- Total production cost is recalculated for each month
- Profit per unit and monthly operating profit are derived
- Monthly results are aggregated into quarterly values

This design ensures that each scenario is evaluated under identical operating conditions, so that any differences in financial outcomes arise solely from the exchange rate path. As a result, the findings remain directly comparable across scenarios, enabling a clear and unbiased assessment of how alternative currency movements influence cost and profitability.

By structuring the model in this way, the analysis captures not only the *level* of profit under different currency conditions, but also the *pattern* over time. Management can observe:

- Which months and quarters are most sensitive to currency movement
- How profit evolves across the year under each scenario
- Whether risk is concentrated in specific periods

3.5 INCORPORATION OF HEDGING INTO THE MODEL

To evaluate the effect of risk management, the model introduces a parallel structure for hedged performance alongside the unhedged case.

For each month and each exchange rate scenario, two profit paths are calculated:

- **Unhedged path** – where the entire import-linked cost is exposed to the market exchange rate
- **Hedged path** – where a fixed portion of the import-linked cost is converted at the forward rate, while the remaining portion follows the market rate

The hedged cost is computed by:

- Fixing the hedged portion of foreign currency at the agreed forward rate
- Allowing the unhedged portion to move with the monthly exchange rate
- Combining both parts to obtain the total import cost for that month

This revised import cost then flows through the same cost and profit structure used in the unhedged model. All other operating variables remain unchanged.

By maintaining an identical framework for both cases, the model ensures that:

- The only difference between hedged and unhedged results is the treatment of exchange rate exposure
- Any change in profit can be directly attributed to the presence of hedging
- Monthly and quarterly comparisons remain clean and meaningful

This parallel design enables the model to demonstrate, for every period, the extent of loss avoided under adverse exchange rate movements, the magnitude of upside forgone under favourable currency conditions, and the manner in which hedging alters the stability of profits over time. In this way, hedging is treated not as a theoretical abstraction, but as a measurable financial decision with clearly identifiable costs and benefits.

3.6 MEASUREMENT OF VOLATILITY AND RISK

Beyond measuring profit levels, the model is designed to evaluate the *stability* of earnings under different exchange rate conditions. This is done by tracking how profit fluctuates over time and identifying the extent of variation across months and quarters.

For each scenario and position (unhedged and hedged), the model:

- Generates a full series of monthly profit values
- Aggregates these into quarterly results
- Observes the spread between higher and lower profit periods

Volatility in this context refers to the degree of fluctuation in operating profit caused by exchange rate movement. A wider spread between peak and low profit periods indicates higher earnings instability. A narrower spread indicates more stable performance.

The model uses this structure to:

- Identify the worst-performing month and quarter
- Measure the range of profit movement over time
- Compare the variability of unhedged profits with hedged profits

By applying the same time-based structure to both cases, the model enables a direct comparison of how unstable profits are in the absence of protection and the extent to which that instability is reduced through hedging. This approach converts exchange rate uncertainty into a visible financial pattern. Volatility is no longer an abstract concept; it becomes a measurable change in business performance over time.

CHAPTER 4

ANALYSIS AND RESULTS

4.1 OVERVIEW OF RESULTS STRUCTURE

This chapter presents the financial outcomes generated by the model under alternative exchange rate conditions. The results are organized to demonstrate how movements in the USD–INR rate influence production cost, operating profit, profit behaviour over time, downside risk, and overall earnings stability.

The analysis is conducted across three exchange rate scenarios base, favourable, and adverse. For each scenario, results are reported under two exposure positions: unhedged and partially hedged. In addition, the outputs are examined at two temporal levels, namely monthly performance and quarterly performance.

This structure enables the analysis to address four practical business questions: how exchange rate movements alter cost and profit, how these effects vary across months and quarters, how large the downside risk becomes under adverse conditions, and how hedging modifies both the level and stability of profits.

All comparisons in this chapter are made under identical operating conditions. Any variation in outcomes arises solely from exchange rate movements and the treatment of hedging. The sections that follow interpret these outputs in a business-oriented manner, focusing on cost pressure, margin erosion, risk concentration, and earnings stability rather than on technical computation.

4.2 IMPACT OF EXCHANGE RATE ON COST

Monthly Import Cost and Total Production Cost under Different Exchange Rate Scenarios (Unhedged)

Date	Base		Favourable		Adverse	
	Monthly Import cost	Total Monthly Cost	Monthly Import cost	Total Monthly Cost	Monthly Import cost	Total Monthly Cost
Jan-2026	2693340	7693340	2619067	7619067	2767613	7767613
Feb-2026	2736411	7736411	2644139	7644139	2828683	7828683
Mar-2026	2704831	7704831	2595140	7595140	2814522	7814522
Apr-2026	2670912	7670912	2543978	7543978	2797846	7797846
May-2026	2669746	7669746	2525538	7525538	2813955	7813955
Jun-2026	2683343	7683343	2521710	7521710	2844976	7844976
Jul-2026	2636288	7636288	2457008	7457008	2815568	7815568
Aug-2026	2635064	7635064	2437868	7437868	2832259	7832259
Sep-2026	2640364	7640364	2424955	7424955	2855773	7855773
Oct-2026	2631840	7631840	2397900	7397900	2865779	7865779
Nov-2026	2617014	7617014	2364214	7364214	2869814	7869814
Dec-2026	2671427	7671427	2399428	7399428	2943425	7943425

Table 4.1: Table presents the monthly import cost and total production cost under Base, Favourable, and Adverse exchange rate scenarios in the unhedged position.

The table shows that domestic costs remain constant across all months, while variations in total cost arise solely from changes in the import-linked component.

Under the Base scenario, total monthly cost fluctuates around the normal operating level, indicating that even expected exchange rate movement introduces cost instability. In the Favourable scenario, import costs are lower, resulting in reduced total cost across most months. In contrast, the Adverse scenario shows a consistent increase in import cost, pushing total production cost higher throughout the year.

This demonstrates that exchange rate movement alone without any change in volume or operations can materially alter the company's cost structure. The unhedged position exposes the firm fully to this variability, making cost planning and margin control uncertain.
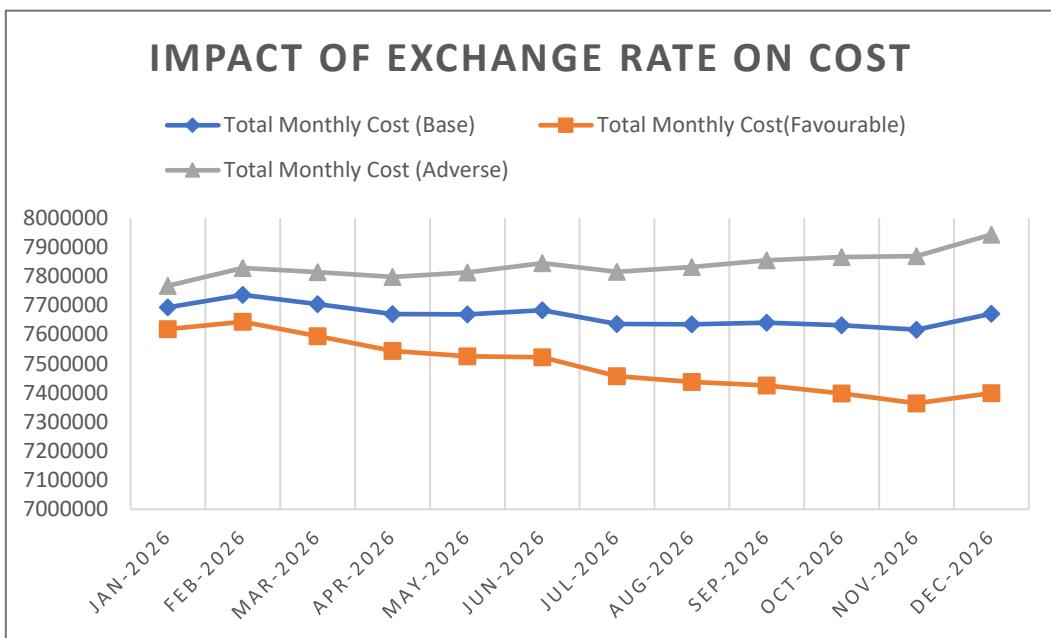
Figure 4.1 – Monthly Total Cost under Different Exchange Rate Scenarios

The chart clearly shows how exchange rate movement alters the company's cost base over time. The three lines represent the same business operating under different currency paths.

The Base scenario fluctuates around the normal cost level, indicating that even routine exchange rate movement introduces month-to-month cost instability. There is no fixed cost floor total cost moves continuously despite unchanged operations.

The Favourable scenario remains consistently below the Base path. As the Rupee strengthens, the import component becomes cheaper, pulling the total cost downward across the year. However, the benefit is uneven, varying from month to month.

The Adverse scenario shifts the entire cost curve upward. As the Rupee weakens, total production cost rises and remains elevated throughout the year. The widening gap between the Adverse and Favourable paths shows how exchange rate divergence translates directly into financial exposure.

This visual pattern highlights a critical risk: in the unhedged position, the company's cost base becomes externally driven and unpredictable. Even without any operational change, exchange rate movement alone can permanently shift the firm's cost structure, making margin planning and budget control inherently unstable.

4.3 IMPACT ON OPERATING PROFIT (UNHEDGED)

| Date	Monthly Profit (Base)	Monthly Profit (Favourable)	Monthly Profit (Adverse)
Jan-2026	639993	714266	565720
Feb-2026	596922	689194	504650
Mar-2026	628502	738193	518811
Apr-2026	662421	789356	535487
May-2026	663587	807795	519378
Jun-2026	649990	811623	488357
Jul-2026	697045	876325	517765
Aug-2026	698270	895465	501074
Sep-2026	692970	908378	477561
Oct-2026	701494	935433	467554
Nov-2026	716320	969120	463519
Dec-2026	661907	933906	389908

Table 4.2 – Monthly Operating Profit under Different Exchange Rate Scenarios (Unhedged)

Table 4.2 presents the monthly operating profit under Base, Favourable, and Adverse exchange rate scenarios in the unhedged position. Since selling price and volume remain constant, all variation in profit arises solely from changes in production cost driven by exchange rate movement.

Under the Base scenario, monthly profit fluctuates around the normal level, showing that even expected currency movement creates earnings instability. The Favourable scenario consistently delivers higher profit across the year, reflecting the benefit of a stronger Rupee in reducing import cost. In contrast, the Adverse scenario results in a sustained reduction in profit, with several months showing a sharp drop in earnings.

The spread between the Favourable and Adverse outcomes highlights the scale of financial exposure. Without hedging, the same business can experience materially different profit levels across months purely due to currency movement, even though operations remain unchanged.
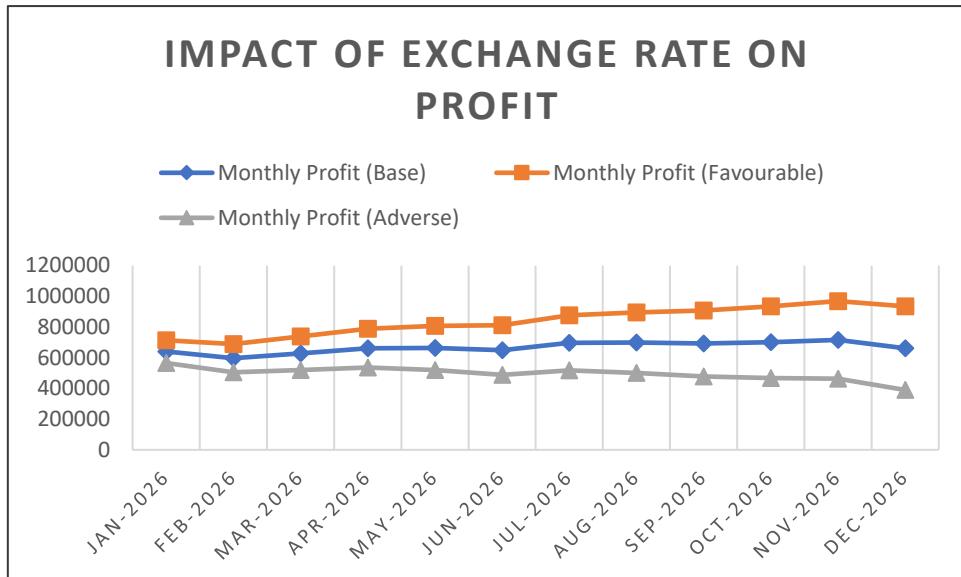
Figure 4.2 – Monthly Operating Profit under Different Exchange Rate Scenarios (Unhedged)

The chart shows how operating profit evolves over the year under three exchange rate paths. The Base line remains relatively stable but exhibits visible month-to-month movement, confirming that routine currency fluctuation alone introduces earnings variability.

The Favourable line trends upward and remains consistently above the Base path. This reflects the benefit of Rupee strength, where lower import costs translate directly into higher monthly profits. However, the gains are uneven and depend on the timing and extent of currency movement.

The Adverse line slopes downward across the year, indicating persistent margin erosion under Rupee depreciation. The widening gap between the Favourable and Adverse paths demonstrates how exchange rate divergence compounds over time, converting currency movement into sustained profit risk.

This visual pattern confirms that, in the unhedged position, profitability becomes externally driven. Exchange rate movement does not merely shift profit levels it changes the trajectory of earnings across the year, making financial performance increasingly uncertain.

4.4 QUARTERLY PERFORMANCE (UNHEDGED)

Quarters	Quarterly Profit (Base)	Quarterly Profit (Favourable)	Quarterly Profit (Adverse)
1	1865418	2141654	-358346
2	1975999	2408774	-91226
3	2088285	2680169	180169
4	2079720	2838459	338459

Table 4.3 – Quarterly Operating Profit under Different Exchange Rate Scenarios (Unhedged)

Table summarizes quarterly operating profit under Base, Favourable, and Adverse exchange rate scenarios in the unhedged position. While the Base scenario shows relatively stable quarterly performance, clear variation is visible across periods, indicating that currency movement affects not only monthly results but also aggregated quarterly outcomes.

Under the Favourable scenario, quarterly profits are consistently higher than the Base case and rise progressively across the year. This reflects how sustained Rupee strength compounds into stronger quarterly earnings.

In contrast, the Adverse scenario reveals the true downside risk. Early quarters experience severe profit compression, including a significant loss in the first quarter. Although later quarters show partial recovery, overall performance remains far below the Base and Favourable cases.

This table demonstrates that exchange rate volatility does not merely affect short-term results. It reshapes the financial profile of entire quarters, altering both the level and stability of earnings over the year.
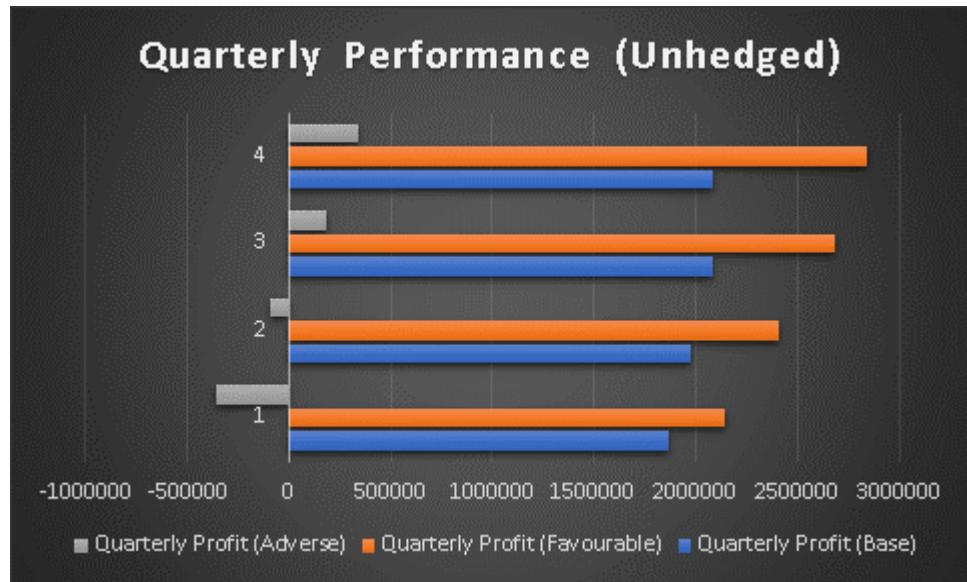
Figure 4.3 – Quarterly Operating Profit Comparison under Different Exchange Rate Scenarios (Unhedged)

The bar chart highlights the divergence in quarterly performance across exchange rate scenarios. The Base bars remain clustered within a narrow range, reflecting moderate earnings stability under normal conditions.

The Favourable bars extend steadily higher from Q1 to Q4, showing how a supportive currency environment lifts profitability across the year. The pattern illustrates cumulative benefit rather than isolated monthly gains.

The Adverse bars reveal concentrated downside risk. The sharp contraction in the first quarter visually emphasizes how early-period currency weakness can generate immediate financial stress. Even though later quarters improve, the gap between Adverse and the other scenarios remains wide.

This visualization reinforces a key insight: in the unhedged position, exchange rate movement can convert what is normally a stable business into one with highly uneven quarterly performance. Currency risk therefore becomes a strategic earnings risk, not merely a short-term fluctuation.

4.5 EFFECT OF HEDGING

| Quarters	hedged Profit (Base)	Unhedged Profit (Base)
1	2139605	1865418
2	2194896	1975999
3	2251039	2088285
4	2246757	2079720

Table 4.4 – Quarterly Operating Profit: Hedged vs Unhedged (Base Scenario)

Table 4.4 compares quarterly operating profit under the Base exchange rate scenario for hedged and unhedged positions. The table shows that in every quarter, the hedged position delivers higher profit than the unhedged position.

This improvement arises because a portion of the import cost is protected at a fixed rate. Even under normal market conditions, routine exchange rate fluctuations create cost pressure in the unhedged case. The hedged structure absorbs part of this movement, resulting in more stable and consistently higher quarterly earnings.

The difference between hedged and unhedged profit represents the financial value of protection. It demonstrates that hedging is not only a defensive tool for extreme situations but also improves earnings quality under normal operating conditions.
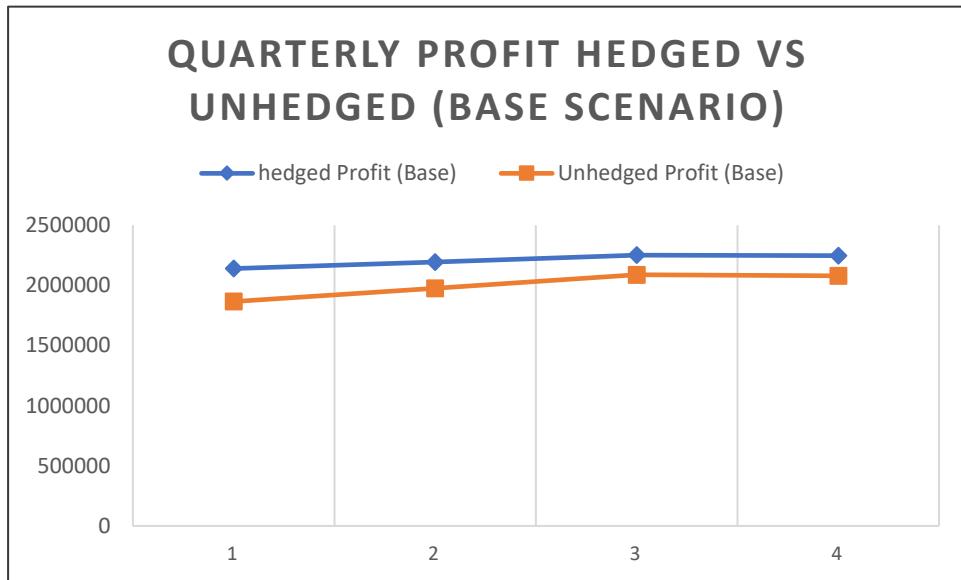
Figure 4.4 – Quarterly Profit Trend: Hedged vs Unhedged (Base Scenario)

The chart visually compares how quarterly profit evolves under hedged and unhedged positions in the Base scenario. The hedged line remains consistently above the unhedged line across all quarters, indicating superior performance throughout the year.

Both lines show a gradual upward trend, reflecting stable business operations. However, the persistent gap between the two paths highlights the structural benefit of hedging. The hedged path is smoother and less sensitive to minor currency movement, while the unhedged path reflects greater exposure to routine exchange rate fluctuation.

This pattern confirms that even in expected market conditions, partial hedging enhances earnings stability and improves financial predictability. Hedging therefore functions not only as a risk shield for adverse periods, but also as a tool for improving the quality and reliability of operating profit.

Quarters	hedged Profit (Favourable)	Unhedged Profit (Favourable)
1	2277724	2141654
2	2411284	2408774
3	2546981	2680169
4	2626126	2838459

Table 4.5 – Quarterly Operating Profit: Hedged vs Unhedged (Favourable Scenario)

Table compares quarterly operating profit under the Favourable exchange rate scenario for hedged and unhedged positions. In the early quarters, the hedged position delivers slightly higher profit, indicating that partial protection still adds stability even when currency movement is supportive.

However, as the year progresses and the Rupee continues to strengthen, the unhedged position begins to outperform. By the third and fourth quarters, the unhedged profit exceeds the hedged profit, reflecting full participation in favourable exchange rate movement.

This table demonstrates the trade-off inherent in hedging. While hedging reduces downside risk, it also limits upside gains when market conditions remain favourable over an extended period.
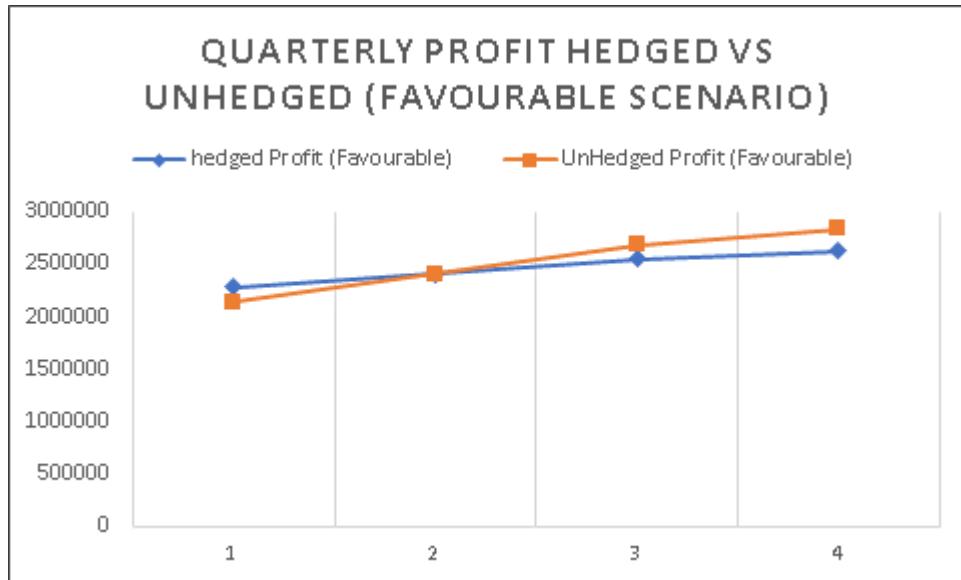
Figure 4.5 – Quarterly Profit Trend: Hedged vs Unhedged (Favourable Scenario)

The chart highlights how profit paths diverge under a favourable currency environment. Both lines trend upward, reflecting improving margins as import costs decline. In the initial quarters, the hedged line remains marginally higher, showing the stabilising effect of protection.

As the favourable trend persists, the unhedged line crosses above the hedged path and continues to rise faster. This visual crossover marks the point where hedging begins to constrain upside potential.

The pattern confirms that hedging is not designed to maximise profit in strong currency conditions. Instead, it trades a portion of upside for protection and stability. In prolonged favourable markets, the unhedged position benefits more, while the hedged position delivers smoother but comparatively lower earnings.

Quarters	hedged Profit (Adverse)	Unhedged Profit (Adverse)
1	2001487	1589182
2	1978508	1543223
3	1955097	1496401
4	1867387	1320981

Table 4.6 – Quarterly Operating Profit: Hedged vs Unhedged (Adverse Scenario)

Table compares quarterly operating profit under the Adverse exchange rate scenario for hedged and unhedged positions. Across all four quarters, the hedged position consistently delivers significantly higher profit than the unhedged position.

In the unhedged case, Rupee depreciation directly raises import cost, compressing margins and reducing profit in every quarter. The hedged position absorbs a portion of this shock by fixing part of the foreign currency exposure, thereby limiting the rise in cost.

The profit gap between hedged and unhedged outcomes remains large throughout the year, showing that protection is not temporary it persists across periods. This confirms that in adverse currency conditions, hedging plays a critical defensive role by preserving earnings and preventing sharp deterioration in quarterly performance.
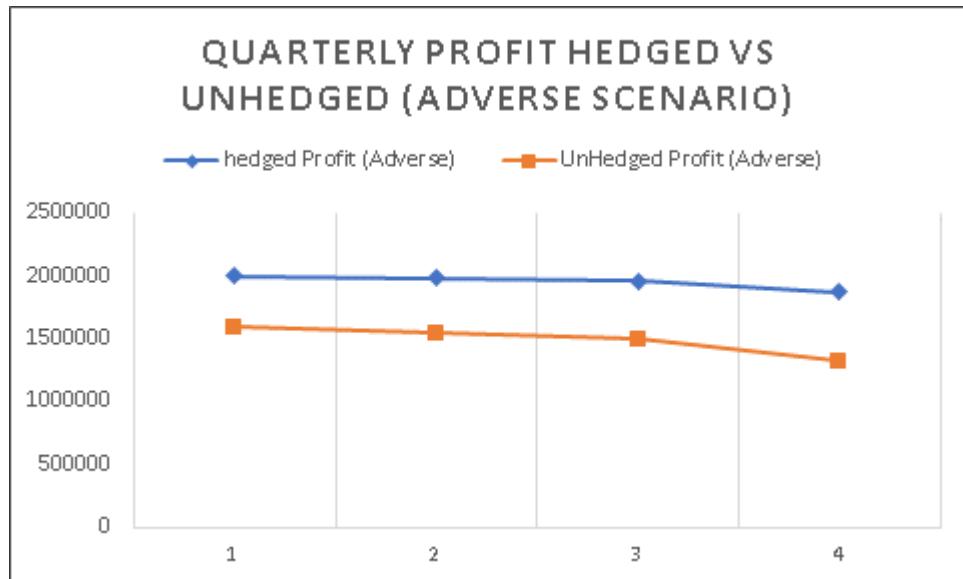
Figure 4.6 – Quarterly Profit Trend: Hedged vs Unhedged (Adverse Scenario)

The chart clearly illustrates the stabilising effect of hedging under adverse currency movement. Both lines trend downward, reflecting sustained cost pressure from Rupee depreciation. However, the hedged line remains consistently above the unhedged line across all quarters.

The unhedged path declines more steeply, indicating accelerated margin erosion as exchange rate weakness compounds over time. In contrast, the hedged path descends gradually, demonstrating that partial protection cushions the business from the full impact of currency shock.

The widening vertical gap between the two lines visually represents avoided loss. This pattern confirms that hedging does not eliminate the effect of adverse movement, but it materially reduces its severity and slows the rate of profit deterioration.

In adverse conditions, hedging therefore functions as a financial shock absorber preserving profitability, improving resilience, and preventing currency volatility from translating directly into earnings instability.

4.6 PROFIT VOLATILITY MEASURES AND COMPARISON

Worst Period Profit

Scenarios	Unhedged Profit	Hedged Profit	Hedging impact
Base	1865418	2139605	274188
Favourable	2141654	2277724	136069
Adverse	1320981	1867387	546406

Table 4.7 – Worst-Period Operating Profit under Unhedged and Hedged Positions

This table captures the worst-period outcome under each exchange rate scenario and compares the unhedged and hedged positions. It represents the lowest profit level the firm experiences during the year in each scenario.

Under the Base scenario, even routine exchange rate movement causes profit to fall to ₹18.65 lakh in the unhedged case. With hedging, the worst-period profit improves to ₹21.39 lakh, providing a protection benefit of ₹2.74 lakh.

In the Favourable scenario, the downside is smaller, yet hedging still adds stability. The worst-period profit rises from ₹21.41 lakh to ₹22.77 lakh, showing that hedging smooths performance even in supportive currency conditions.

The Adverse scenario reveals the true value of hedging. The unhedged position drops to ₹13.20 lakh in the worst period, indicating severe margin stress. Hedging lifts this to ₹18.67 lakh, reducing the downside by ₹5.46 lakh. This is not a marginal improvement it represents a material preservation of earnings. It shows that hedging does not eliminate loss, but it significantly raises the floor of performance. In adverse conditions, it prevents extreme deterioration and protects the firm from sharp earnings shocks.

Volatility Measures Unhedged

Scenarios	High Profit	Low Profit	Volatility
Base	2088285	1865418	222867
Favourable	2838459	2141654	696804
Adverse	1589182	1320981	268200

Table 4.8 – Profit Volatility Measures (Unhedged)

This table measures earnings volatility in the unhedged position as the range between the highest and lowest quarterly profit under each exchange rate scenario.

Under the Base scenario, unhedged profit fluctuates by ₹2,22,867 across the year, showing that even routine currency movement introduces noticeable instability.

In the Favourable scenario, volatility rises sharply to ₹6,96,804. Although profits are higher overall, the wide spread indicates uneven performance across quarters, driven by the timing of exchange rate movement.

The Adverse scenario shows volatility of ₹2,68,200, reflecting significant earnings fluctuation under sustained currency pressure.

These results confirm that without protection, profit behaviour becomes externally driven and irregular. Exchange rate movement does not merely change the level of profit it causes earnings to swing across periods, complicating planning, budgeting, and performance evaluation.

Volatility Measures Hedged

Scenarios	High Profit	Low Profit	Volatility
Base	2251039	2139605	111433
Favourable	2626126	2277724	348402
Adverse	2001487	1867387	134100

Table 4.9 – Profit Volatility Measures (Hedged)

This table measures earnings volatility under the hedged position as the range between the highest and lowest quarterly profit within each exchange rate scenario.

Under the Base scenario, volatility reduces to ₹1.11 lakh, indicating that hedging compresses routine profit fluctuation and delivers a more stable earnings profile.

In the Favourable scenario, volatility increases to ₹3.48 lakh. While profits are higher overall, the presence of a fixed hedge rate limits full participation in favourable movement, producing a wider spread between early and later quarters.

Under the Adverse scenario, volatility is contained at ₹1.34 lakh. Despite sustained currency pressure, hedging prevents sharp deterioration and keeps profit movement within a narrow band.

Compared with the unhedged structure, the hedged position exhibits materially lower variability in Base and Adverse conditions. This confirms that hedging reshapes profit behaviour by raising the earnings floor and reducing sensitivity to external currency movement.

Profit Volatility Comparison

Scenarios	Unhedged Volatility	Hedged Volatility	Volatility Reduction	Volatility Reduction %
Base	222867	111433	111433	50%
Favourable	696804	348402	348402	50%
Adverse	268200	134100	134100	50%

Table 4.10 – Profit Volatility Comparison under Unhedged and Hedged Positions

This table directly compares profit volatility under unhedged and hedged positions across all exchange rate scenarios. Volatility is measured as the range between the highest and lowest quarterly profit within each scenario.

In every case, hedging reduces volatility by exactly 50 percent. This occurs because half of the foreign currency exposure is fixed through hedging, while the remaining half continues to follow the market rate.

Under the Base scenario, routine currency movement creates a profit spread of ₹2.23 lakh in the unhedged position. Hedging compresses this to ₹1.11 lakh, delivering a more stable earnings profile.

In the Favourable scenario, unhedged volatility reaches ₹6.97 lakh, reflecting uneven profit growth across quarters. Hedging limits this variation to ₹3.48 lakh, trading some upside potential for smoother performance.

Under the Adverse scenario, unhedged profit fluctuates by ₹2.68 lakh, indicating sharp margin stress. Hedging cuts this to ₹1.34 lakh, materially reducing downside instability.

This table demonstrates that hedging does not aim to maximise profit. Its core function is to control uncertainty. By systematically reducing earnings fluctuation, hedging transforms profit behaviour from externally driven and irregular into structured and predictable performance.

CHAPTER 5
FINDINGS, CONCLUSIONS AND SUGGESTIONS

5.1 FINDINGS

1. Exchange rate movement directly alters the company's cost structure even when production volume and selling price remain unchanged. Variations in USD–INR alone are sufficient to shift total monthly cost.

2. In the unhedged position, both cost and profit become externally driven. Routine currency movement introduces month-to-month instability, making earnings unpredictable despite stable operations.

3. Under favourable exchange rate conditions, profit increases, but the growth is uneven across months and quarters. Higher profit is accompanied by higher volatility.

4. Under adverse exchange rate conditions, profit erosion is immediate and sustained. The business experiences sharp margin compression, and early-period losses have a lasting impact on quarterly performance.

5. Quarterly aggregation does not eliminate risk. Exchange rate movement reshapes entire quarters, converting a normally stable business into one with uneven financial performance.

6. Partial hedging consistently improves profit levels under Base and Adverse scenarios. In every quarter, the hedged position delivers higher earnings than the unhedged position under normal and weak currency conditions.

7. In prolonged favourable markets, the unhedged position eventually outperforms the hedged position. This confirms that hedging trades a portion of upside potential for protection and stability.

8. Worst-period analysis shows that hedging materially raises the earnings floor. In adverse conditions, hedging prevents extreme deterioration and preserves a significant portion of profit.

9. Profit volatility in the unhedged position is high across all scenarios. Earnings fluctuate widely across quarters, complicating budgeting and performance evaluation.

10. Hedging reduces profit volatility by approximately 50 percent across all scenarios. This reduction aligns with the proportion of exposure hedged and demonstrates that risk control is systematic, not incidental.

11. Hedging does not eliminate currency impact. It reshapes profit behaviour from externally driven and irregular to structured and predictable.

12. The model confirms that exchange rate risk is not a peripheral financial issue. It is a core operational risk that directly determines cost, margin, and earnings stability.

5.2 CONCLUSIONS

Exchange rate movement emerges from this analysis as a core operational risk for import-dependent manufacturing firms. The results show that even in the absence of any change in production volume, efficiency, or selling price, fluctuations in USD–INR are sufficient to alter total cost and operating profit. Cost behaviour becomes externally influenced, and profit no longer reflects only internal performance. Routine currency movement introduces instability into monthly results, while sustained depreciation reshapes quarterly outcomes. This establishes that foreign exchange risk is not a peripheral macroeconomic factor but a direct driver of business performance, capable of altering margins and earnings without any operational failure.

The unhedged structure magnifies this exposure. Under normal conditions, profits fluctuate unpredictably; under adverse conditions, margin compression becomes persistent and severe. The firm's financial profile shifts from stable to externally driven, weakening the reliability of budgets, forecasts, and performance benchmarks. Earnings become sensitive to timing rather than management action. Such a structure reduces managerial control over outcomes and increases uncertainty in planning. The business may appear operationally sound, yet experience financial stress purely due to currency movement. This disconnect between operational stability and financial volatility represents a structural weakness in the absence of risk management.

Partial hedging fundamentally changes this behaviour. By fixing a portion of foreign currency exposure, the firm raises its earnings floor and compresses profit fluctuations. The results indicate that hedging consistently improves outcomes under normal and adverse conditions and materially reduces downside risk. Although hedging limits full participation in favourable currency movement, it transforms profit behaviour from irregular and externally driven to structured and predictable. Hedging therefore functions not as a profit-enhancing tool, but as a mechanism of financial control. When exchange rate risk is left unmanaged, it reshapes the firm's entire earnings profile. When managed systematically, it becomes a measurable and controllable element of financial strategy, enabling management to plan with confidence and maintain margin discipline across uncertain currency environments.

5.3 SUGGESTIONS

- Import-dependent manufacturing firms should treat exchange rate risk as a core financial risk, not as a secondary macroeconomic factor. FX exposure must be actively monitored and managed as part of routine financial planning.

- A partial hedging policy should be adopted as a standard treasury practice. Hedging a defined portion of foreign currency exposure provides protection against adverse movement while retaining some benefit from favourable conditions.

- The hedge ratio should be aligned with the firm's risk tolerance. Firms with thin margins and high import dependence should maintain a higher hedge cover, while firms with stronger margins may adopt a more flexible approach.

- Annual budgets and cost plans should incorporate an exchange rate buffer. Instead of assuming a single rate, management should prepare cost projections under multiple FX scenarios.

- Monthly monitoring of exchange rate movement and its cost impact should be integrated into management reporting. This allows early identification of margin pressure and timely corrective action.

- Pricing decisions and contract negotiations should account for currency exposure. Where possible, firms should include revision clauses or build FX risk into pricing strategy.

- Hedging decisions should be evaluated not only on profit impact but on earnings stability. The objective should be to preserve margin discipline and predictability rather than to maximize short-term gains.

- Finance and operations teams should work together to ensure that currency risk is understood across functions and reflected in procurement, budgeting, and performance evaluation.

ANNEXURE:

EXCEL COMPUTATION SCREENSHOTS:

Fig A1: Monthly Cost Structure and Cost Sheet Build-up

Fig A2: Per Unit and Monthly FX Impact Calculations

Fig A3: Quarterly FX Effect and Volatility Measures

Fig A4: Monthly Hedging Impact Calculations

Fig A5: Quarterly Hedging Effect and Volatility Measures