# Hedging Tools and Techniques for Foreign Exchange Exposure in India

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**Abstract:**
*In recent years, there has been spontaneous and unpredictable fluctuation in the value of Indian rupee. The paper looks at the necessity of managing foreign exchange rate exposure, and ways by which it can be accomplished. This paper discusses exchange rate exposure in terms of transaction risk (sensitivity of firm's future cash flows from contracts denominated in foreign currency to changes in exchange rate), translation risk (sensitivity of firm's foreign denominated financial statements to changes in exchange rate) and economic risk (sensitivity of firm's competitive position in the market to changes in exchange rate). It identifies various steps involved in foreign exchange risk management process. This paper seeks to analysis the various options available to the Indian corporates for hedging exchange rate exposure.*

**Keywords:** *Derivatives, Exposure, Hedging, Risk management*

## 1. Introduction

With the fall of fixed exchange regime in 1973, exchange rates between currencies were determined by market forces of demand and supply leading to the advent of fluctuating exchange rate regime. This brought with it randomness and unpredictability in exchange rates. Exchange rates have become more volatile than they were expected. This random fluctuation in exchange rate has made cash flows and asset value of companies dealing in different currencies unpredictable, that is to say, cash flows and asset value of MNCs in their respective domestic currency are at stake of exchange rate between its domestic currency and foreign currency. Thus, Foreign Exchange Exposure is risk associated with unanticipated changes in exchange rate.

With globalization and liberalization of Indian economy in nineties, scope of business for Indian companies with the rest of world has broadened and foreign corporations too have become much interested in India. In India, exchange rates were deregulated and were allowed to be determined by markets in 1993. This volatility in exchange rates can have detrimental effect on the firm’s financial position and negative effect on its competitive position in the market and value of firm, if ignored it can paralyze the company.

## 2. Significance of Study

In 1992-93 Budget provided for partial convertibility of Indian Rupee in current accounts and, in March 1993, the Rupee was made fully convertible in current Account. Since then, there has been continuous increase in foreign investment in India. Multi-national corporations are entering the Indian market with their products and services either through subsidiaries or joint venture. Indian corporate houses are also involved in cross border transactions with different countries and in different products. Indian firms have also started raising funds from international financial sources. Rupee depreciated against dollar by about 24% between March 2008 and March 2009 from Rs. 39.80 to Rs. 52.20. And it depreciated against dollar by about 6.23% between June 2014 and June 2014. This impulsive and volatile change in exchange rate makes the environment unpredictable making the business decisions complicated and this volatility can negatively affect the firm's cash flows and value. The paper looks at the necessity of managing foreign exchange rate exposure, and discusses the measures that can be taken to mitigate foreign exchange risk. It identifies various steps involved in foreign exchange risk management process. This paper attempts to evaluate the various alternatives available to the Indian corporates and foreign business houses operating in India for hedging exchange rate exposure. The financial stability report published by RBI in Dec 2012 mentions "excessive volatility in exchange rate makes it difficult for economic agents to make optimal intertemporal decisions. The economic agents, therefore, need to properly understand and measure the nature of currency risk embedded in their business and use appropriate derivative instruments to hedge their currency risk..."

## 3. Objectives of Study

This paper identifies various types of foreign exchange exposures in MNCs operating in India. The focal point of this paper is identification of various tools and techniques to mitigate foreign exchange exposure of companies operating in India. Objectives of the study have been to discuss foreign exchange risk management process and the steps involved in it and to examine the facilities available for managing foreign exchange exposure in India.

## 4. Literature Review

Bradford Cornell and Alan C. Shapiro (1983) described how foreign exchange risk can be managed. Ian H. Giddy and Gunter Dufey, in their article "The Management of Foreign Exchange risk", identified that in many realistic situations, the economic effects of randomness of exchange rate are different from those predicted by the various measures of translation exposure. It emphasizes the distinctions between the currency of location, the currency of denomination and the currency of determination of a business. They argued that a market based approach be followed in international financial planning.

Fok et al. (1997) have found that hedging not only reduces variability in earnings but it also increases firm value. They found that hedging not only decreases the chances of financial distress but also the agency costs of debt and the costs of equity.

Chowdhry and Howe (1999) argue that firms use financial instruments to hedge short term exposure and for managing long-run operating exposure, they use long-term strategy adjustments (i.e., operational hedges).

Niclas hagelin and bengt pramborg (2002) investigated the effectiveness of currency derivatives and foreign denominated debt in reducing foreign exchange exposure. The results were positive.

Sathya Swaroop Debasish (2008) studied the foreign exchange risk management practices of 501 non-banking Indian firms to identify the techniques which they use to hedge their foreign exchange risk. It was revealed that volatility and reduction in cash flows was the rationale behind hedging. The techniques used by Indian firms are forward contracts, swaps and cross-currency options. Confused perception about derivative use, technical and administrative constraints and fear of high cost were found to the main reasons of not pursuing any foreign exchange risk management technique. The paper discusses the various foreign exchange risk management techniques.

Jain, Yadav, and Rastogi (2009) discusses and compares the foreign exchange risk management strategies and interest rate risk management strategies followed by public companies, private business houses and foreign companies operating in India. All the risks are not managed. Management of these companies operating in India are of opinion that amount of exposer accruing to these do not require to be specially managed.

Peter mbabazi mbabazize, twesige daniel and issac emukule ekise(2014) found that exporting firms in Uganda had a significant relationship between currency risk transfer strategies and gross profit margin, net profit margin and sales growth.

## 5. Research Methodology

Extensive literature review of books, journals, articles and other published data related to the focus of the study, and also concerned websites, was done to gather background information about the general nature of the research problem.

## 6. Types of Foreign Exchange Exposure

### 1. Translation exposure

It is the sensitivity of firm's foreign currency denominated financial statements to changes in exchange rate. Financial statements of foreign subsidiary are to be translated in home country currency for finalizing the accounts for any given period and holding companies has to prepare consolidated financial statements. Fluctuation in exchange rates will make the value of assets and profit amount different depending on different exchange rate applied. So value of same assets and profit would be different for different period. Thus, Translation exposure arises on the consolidation of assets, liabilities and profits denominated in foreign currency in the process of preparing consolidated accounts. It can be measured as Translation exposure = (exposed assets - exposed liabilities) (change in exchange rate)

### 2. Transaction Exposure

It is the sensitivity of firm's future cash flows from contracts denominated in foreign currency to changes in exchange rate. It is a measure of change in the value of outstanding financial obligations which are denominated in foreign currency. In other words, Transaction risk refers to the impact of exchange rate changes on the value of committed cash flows i.e. future cash flows for which nominal value is known. Marshall (2000) found that US, UK and Asian Companies focuses on management of transaction risk only.

### 3. Economic Exposure

It is the sensitivity of firm's competitive position in the market to changes in exchange rate. It refers to the possibility of the change in the present value of the firm's expected future cash flows due to unexpected change in exchange rates. It is also called operating exposure. It measures the change in the present value of the firm, which results from any change in future operating cash flows caused by unexpected exchange rates fluctuation. Pantzalis et al (2001) defines Operating exposure as the effect of unexpected changes in the exchange rate on cash flows associated with a firm's real assets and liabilities. It affects the profitability of the firm over a longer period than transaction and translation exposure.

## 7. Foreign Exchange Risk Management

### 1. Identification and quantification of exposure

Business cycle of the company is analyzed to identify where foreign exchange risk exists. Future cash flow which are confirm to arise out of contracts already entered and future foreign currency cash flows which are not confirm over the time period are forecasted and measured to get the foreign exchange exposure. After measuring the level of exposure of the company, decision is to be made regarding what magnitude of risk is to be hedged and how much risk is to be covered.

### 2. Policy formulation

Effective FERM requires well-framed policies, clear objectives and parameters within which the strategy is to be controlled. These policies should clearly mention the principles which is to be followed and extent of hedging (risk coverage) which are needed. Objectives should set standard for bank's exposure to foreign exchange risk; and personnel are appointed who have the authority to trade in foreign exchange on behalf of company; and should mention the different currencies, which have been approved for transaction within the company. There should be some stop loss arrangements to prevent the firm from abnormal losses if the forecasts turn out wrong. There should be monitoring systems to detect critical levels in the foreign exchange rates where appropriate measure is required.

**3. Hedging**

After formulating policies, the firms then decides about an appropriate hedging strategies keeping in mind the principles and objectives and extent of exposure coverage. There are various financial instruments available for the firm to mitigate its risk- futures, forwards, options and swaps and issue of foreign debt. Hedging strategies and instruments are explained later.

**4. Reporting and Review**

Risk management policies are periodically reviewed based on periodic reports prepared. These periodic reports measure the effectiveness of hedging strategy adopted by the company to mitigate its foreign exchange exposure. The review of risk management policies are done to judge the validity of benchmarks set; whether they are effective in controlling the exposures; what the market trends are and whether the overall strategy is enough or change is required in it.

## 8. Hedging Tools and techniques

### *8.1 External techniques*

**1. Forward Contracts**

Forward contracts involve an agreement between two parties to buy/sell a specific quantity of an underlying asset at a fixed price on a specified date in the future. In other words, Forward contracts are those where counterparty agrees to exchange a specified quantity of an asset at a future date for a price agreed today. These are the most commonly used foreign exchange risk management tools. The corporations can enter into forward contracts for the foreign currencies which it need for payment or which it will receive in future. Since the rate of exchange is already fixed for the future transaction, there will be no variability in the cash flows. Hence, changes that take place between the contract date and the actual transaction date does not make any impact. This will eliminate the foreign exchange exposure. The future settlement date can be an exact date or any time between two agreed dates.

**2. Currency Futures**

Currency futures contract involves a standardized contract between two parties to buy/sell an amount of currency at a fixed price on a specified date in the future and are traded on organized exchanges. Futures contracts are more liquid than forward contracts as they are traded in an organized exchange. A depreciation of currency can be hedged by selling futures and currency appreciations can be hedged by buying futures. Thus, inflow and outflow of different currencies with respect to each other can be fixed by selling and buying currency futures, eliminating the Foreign Exchange Exposure.

**3. Currency Options**

Currency options are contracts which provides the holder the right to buy or sell a specified amount of currency for a specified price over a given time period. Currency options give the owner of the agreement the right to buy or sell but not an obligation. The owner of the agreement has a choice whether to use or not to use the option based on the exchange rates. He/she can choose to sell or buy the currency or let the option lapse. The writer of the option gets a price for granting this option. The price payable is known as premium. The fixed price at which the owner can sell or buy the currency is called as strike price or the exercise price. Options giving the holder a right to buy are called call options and Options giving the holder a right to sell is called put options. It is possible to take advantage of the potential gains through currency options. For example, If an Indian business firm has to purchase capital goods from the USA in US$ after three months, the company should buy a currency call option. There are two possibilities. First, if the dollar depreciates, then the exchange rates will be favorable as spot rate will be less than the strike price and the company can buy the US$ at the prevailing spot rate, as it will cost less. Second, if the dollar appreciates, then the exchange rates will be unfavorable as spot rate will be more than the strike price and the company can opt to use its right and buy the US$ at the strike price. Hence, in both the cases the company will be paying the less to buy the dollar to pay for the goods.

**4. Currency Swaps**

A currency swap involves an agreement between two parties to exchange a series of cash flows in one currency for a series of cash flows in another currency, at agreed intervals over an agreed period. This is done to convert a liability in one currency to some other currency. Its purpose is to raise funds denominated in other currency. One party holding one currency swaps it for another currency held by other party. Each party would pay the interest for the exchanged currency at regular interval of time during the term of the loan. At maturity or at the termination of the loan period each party would re-exchange the principal amount in two currencies.

**5. Foreign Debt**

Foreign debts are an effective way to hedge the foreign exchange exposure. This is supported by the International Fischer Effect relationship. For example, a company is expected to receive a fixed amount of Euros at a future date. There is a possibility that the company can experience loss if the domestic currency appreciates against the Euros. To hedge this, company can take a loan in Euros for the same time period and convert the foreign currency into domestic currency at the spot exchange rate. And when the company receives Euros, it can pay off its loan in Euros. Hence the company can completely eliminate its foreign exchange exposure.

**6. Cross Hedging**

Cross Hedging means taking opposing position in two positively correlated currencies. It can be used when hedging of a particular foreign currency is not possible. Even though hedging is done in a different currency, the effects would remain the same and hence cross hedging is an important technique that can be used by companies.

**7. Currency Diversification**

Currency Diversification means investing in securities denominated in different currencies. Diversification reduces the risk even if currencies are non-correlated. It will give the company global exposure, minimize foreign exchange exposure and capitalize on exchange rate disparities.

## 9. Internal Techniques

### A. Netting

Netting implies offsetting exposures in one currency with exposure in the same or another currency, where exchange rates are expected to move high in such a way that losses or gains on the first exposed position should be offset by gains or losses on the second currency exposure. It is of two types of bilateral netting & multilateral netting. In bilateral netting, each pair of subsidiaries nets out their own positions with each other. Flows are reduced by the lower of each company's purchases from or sales to its netting partner.

### B. Matching

Matching refers to the process in which a company matches its currency inflows with its currency outflows with respect to amount and timing. When a company has receipts and payments in same foreign currency due at same time, it can simply match them against each other. Hedging is required for unmatched portion of foreign currency cash flows. This kind of operation is referred to as natural matching. Parallel matching is another possibility. When gains in one foreign currency are expected to be offset by losses in another, if the movements in two currencies are parallel is called parallel matching.

### C. Leading and Lagging

These involve adjusting the timing of the payment or receivables. Leading is accelerating payment of strengthening currencies and speeding up the receipt of weakening currencies. Lagging is delaying payment of weakening currencies and postponing receipt of strengthening currencies. In these the payable or receivable of the foreign currency is postponed in order to benefit from the movements in exchange rates.

### D. Pricing Policy

There can be two types of pricing tactics: price variation and currency of invoicing policy. Price variation can be done as increasing selling prices to offset the adverse effects of exchange rate fluctuations. However, it may affect the sales volume. So proper analysis should be done regarding customer loyalty, market position, competitive position before increasing price. Secondly, foreign customers can be insisted to pay in home currency and paying all imports in home currency.

### E. Government Exchange Risk Guarantee

Government agencies in many countries provide insurance against export credit risk and introduce special export financing schemes for exporters in order to promote exports. In recent years a few of these agencies have begun to provide exchange risk insurance to their exporters and the usual export credit guarantees. The exporter pays a small premium on his export sales and for this premium the government agency absorbs all exchange losses and gains beyond a certain level.

## 10. Conclusion

Foreign exchange exposure management is too important to be ignored by businesses across the world, including emerging world like India. Businesses which did not give due care to it have paid the penalty. Business firms need to be proactive in foreign exchange risk management. Firms need to look at instituting a sound risk management system and also need to formulate their hedging strategy that suits their specific firm characteristics and exposures. In India, regulation has been steadily eased and turnover and liquidity in the foreign currency derivative markets have increased, although the use is mainly in shorter maturity contracts of one year or less. Forward and option contracts are the more popular instruments. Initially only certain banks were allowed to deal in this market however now corporate can also write option contracts. Indian companies are actively hedging their foreign exchanges risks with forwards and currency swaps and different types of options. Introduction of Cross-Currency Futures and Exchange Traded Option Contracts by the RBI will further enhance the companies' ability to effectively manage foreign exchange exposure. A larger interactive model capable of culminating all facets of enterprise-wide risk management needs to be developed. It is concluded that business and industry should invariably hedge their actual risk exposures without exception as a base case strategy as it is most conservative and prudent strategy. Government should make appropriate policy and took measures that can accelerate the process of further development of foreign exchange market. Companies should upgrade their foreign exchange risk management (FERM) process and employ innovative tools to mitigate foreign exchange exposure.

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