



 **George Paul***

Disfavoured Derivative



 **Dr. T G Saji****

Introduction

In September 2022, a report by 'Bloomberg' about the Indian economy has received a lot of media attention. As per the report, during the last three months of 2021, India has become the fifth largest economy in the world, beating the United Kingdom. According to IMF's 2022 forecast, Indian GDP expects to reach \$3.53 trillion and the UK to \$3.38 trillion respectively. There is a steady improvement in the country's GDP growth from USD 496 billion in 2001 to over USD 3500 billion in 2022. One of the major drivers of this progress is global trade.

India was very reluctant and cautious to open borders for international trade since it is an independent sovereign state. However, depletion of country's foreign exchange reserves to a precarious level in the year 1991, forced the government to introduce conscious policy changes to facilitate international capital flow and trade. The opening of economy during the 1990's acted as a catalyst for historical changes in the financial fabric of the country. As a part of the saga, global business has also been increased manifolds. Trade barriers were dismantled and individuals and entities from the country expanded their business to various international destinations, for selling their products and for sourcing capital & investment. Several Indian companies, especially in the field of IT/ITeS, were become global leaders in their field of operations. This international make

over subjects enable such entities to have diversified revenue streams from different geographies that ultimately lead to the enhanced volume of non-INR exposure.

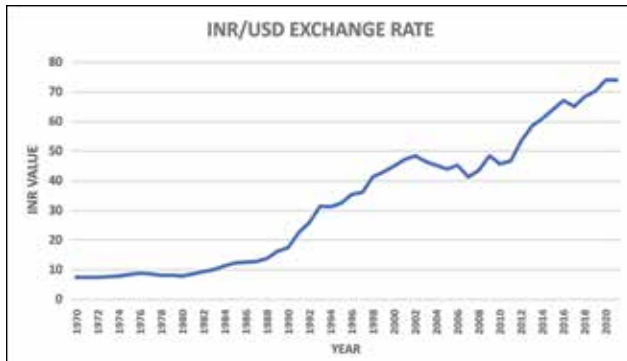
The national currency INR is the only one currency which enjoys the 'legal tender' status in India. Literature and findings of the past study observed that Indian foreign exchange market is weak form efficient and that exchange rates follow a 'random walk'. Change in value of currency rates are influenced by economic factors like demand & supply, interest rates, inflation, and health of the economy (FDI, FPI, Forex Reserve, CAD) etc. Political factors will also influence the currency movements. One of the classic examples for this phenomenon is the steep fall in value of Great Britain Pound on decision of 'BREXIT' (the highly sensitive resolution for exiting from the European Union). Likewise, psychological factors could be instrumental in changing value of currencies. Many times, onset of geopolitical frictions around the world leads to hardening of US dollar as it possesses the 'safe haven' status. We may recall the recent episode of high volatility experienced by the national currency and breaking the psychological barrier of Rs. 80/US dollar (USD) on 19th July 2022. Even though rupee traded at that level for a brief period during the early day trade, subsequently, it has regained some lost momentum and closed the day at Rs. 79.90. FBIL fixed the reference rate of INR/USD for the day as 79.9478. Geopolitical developments,

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mainly Russia-Ukraine war, which started in February 2022 and the spike in crude price as its aftermath, was the main trigger for the fall of Indian rupee.

Figure 1: Rupee-Dollar Exchange rate movement:1970-2021(Calendar- year annual average data)



Source: RBI, FEDAI and FBIL

The ‘Random walk’ movement of INR against the USD poses hurdles to various stake holders - from policy makers to public. Exchange rate fluctuations affect the value of international investment portfolios, competitiveness of exports and imports, value of international reserves, currency value of debt payments, and the cost to tourists in terms of the value of their currency. Movements in exchange rates, thus, have important implications for the economy’s business cycle, trade and capital flows (Dua & Ranjan, 2010). The constant depreciation in the Rupee against the US Dollar reflects concerns around the widening trade gap amid sustained capital outflows (Ghose, 2022).

The strategic choice of hedging such currency risk is by using derivative instruments like forward contracts, currency futures, currency options and swaps. Among these instruments, forward contracts are the most popular ones in India’s foreign exchange market. The country, being a fast-developing economy, experiences spike in international trade, especially

after the openness of the economy during the 1990’s. Development of a matured and effective derivative market facilitates the growth of international trade.

The weakening of INR in a quick pace during the month of July 2022 has prompted us to dig deep into the subject - managing currency risks using forward contracts in Indian context. The study was concentrated primarily on the derivative product ‘forward contracts’, as the market of remaining derivative products is very shallow in Indian foreign exchange ecosystem. Debasish made a study on the foreign exchange risk management practices in India and concluded that, in terms of the external techniques for risk hedging, the preference is mostly in favour of forward contracts (Debasish, 2008). Sivakumar & Sarkar studied about the methods of corporate hedging for foreign exchange risk in India and found that forward contracts are the most popular hedging tool. They further observed that forward contracts can be tailored to the exact needs of the firm, and this could be the reason for their popularity. Tailorability is a consideration as it enables the firms to match their exposures in an exact manner compared to exchange traded derivatives like futures that are standardised where exact matching is difficult (Sivakumar & Sarkar, 2008). Our focus in this article is INR against US dollar as about 85% of the foreign exchange transactions of India have dollar exposure.

I. Foreign Exchange Risk Management

Exchange rates, like other asset prices, are influenced not only by current market conditions, but also to a very important extent by the expectations of the market participants of future events likely to affect exchange rates (Mussa, 1981). Currency markets are incredibly complex, and it is impossible to completely enumerate all the factors that determine exchange

rates (archana et al, 2022). Exchange rates are susceptible to perennial fluctuations. Hence, one of the major risks associated with international business is foreign exchange risk. Hedging currency exposure is equivalent to replacing the very volatile and stochastic exchange rate component of international investment returns with the ex-ante known and much less volatile forward premium or discount (Schmittmann, 2010). Foreign Exchange Risk Management (FERM) involves using both internal and external techniques such as forwards, futures, options, and swaps that are called as currency derivatives. The firms with greater growth opportunities and tighter financial constraints are more inclined to use currency derivatives (Basanna & Vittala, 2019). Firms with extensive foreign exchange-rate exposure and economies of scale in hedging activities are also more likely to use currency derivatives (Geczy et al., 1997). A proper and systematic FERM strategy will enable the individuals and firms having foreign currency exposure, to mitigate their currency risk. This will further enable them to be released from the clutches of complications in foreign exchange risk management and focus more on their core business activities. Hedging helps to remove one of the most important potential sources of foreign exchange risk to the economy (Becker & Fabbro, 2006). The question of whether or not to hedge exchange risk becomes a question of the company's own risk profile with respect to interim volatility in earnings and cash flows (Lewent & Kearney, 1990). The foreign exchange settlement in the country is highly skewed towards settlement of contracts on spot terms. Concentration of inter-bank trading is in the SPOT window, and Forwards account for little less 10% in terms of deals and more than 20% in terms of value (Nath, 2013). The proportion of forward trades to the total foreign exchange trades in India is showing a declining trend and as per the data, it is 3.98% as on March 2022.

Figure 2: Proportion of forward market trade in total foreign exchange trades in India (month wise)



Source: 'Fact Book 2022', The Clearing Corporation of India Ltd

It is quite surprising to observe that stakeholders in India generally follows lukewarm hedging strategies, despite the volatility and uncertainty of the value of foreign currencies. We tried to find an answer to this paradox. This study was focussed on the derivative product forward contracts.

II. Forward contracts

The hedging strategy using forward contracts is the process of entering into a contract to buy/sell foreign currency on a future date with a fixed rate which is called forward exchange rate. Forward exchange rates are determined by the difference in interest rates of the currency pair. This is known as the 'Interest rate parity' theory. The theory states that, the exchange rate differential between the currencies of the two countries in the forward market will set off the interest rate differential between two countries.

Interest rate parity is a no - arbitrage condition. According to the Interest rate parity theory, the percentage spread (annualised premium or discount) between the forward rate and spot rate of a currency will be approximately equal to interest rate differential between two countries. The theory explains that no investor will be allowed to gain a riskless return by

borrowing funds at lower rate in one country and investing at higher rate in another country. The two assumptions to interest parity theory are absolute capital mobility and perfect substitutability of domestic and foreign assets. The theory explains that under market equilibrium, exchange rate adjusted expected return on foreign assets will be equal to the return on domestic assets.

Table 1: Details of data collected and analysed

Category	Period	Number of observations
3 Months forward	31-08-2002 to 30-04-2022	237
6 Months forward	31-08-2002 to 31-01-2022	234
12 Months forward	31-08-2002 to 31-07-2021	228

Source: Thomson Reuters database

The future exchange rate was calculated based on the forward premium. Then arrived rates were compared with the actual spot exchange rates on the respective maturities to test the accuracy. A total number of 699 observations were analysed. The result of the study revealed that in the case of 698 observations, the spot rate was different from the forward rate.

Data & Method

The analysis was done on the accuracy in market forward premium of the INR/USD exchange rates. Three different maturities (3 month forward, 6 month forward and 12 month forward) were analysed during the study.

Approximately, in 65% of the observations, the spot rates were lesser than the forward rates and in 35% of the instances, the spot rates were higher than the forward rates. The trend was uniform across all the three maturities. Only in one observation (6 Months forward as on 31-12-2003), the forward rate and spot rate had the same value. Details are given below.

Table 2: Difference between real spot rate and forward rate (rate calculated by adding the forward premium on the spot rate of forward booking date)

Category	No. of months in which real spot rate are higher than forward rate	No. of months in which real spot rate are lesser than forward rate	Total
3M Forward	87	150	237
6M Forward	83	150*	233
12M Forward	77	151	228

* Difference is nil in 1 observation

Discussion

I. Deficiency

There is a general consensus that forward rates have little power to forecast future spot exchange rates (Fama, 1984). In the Indian context, demand and supply factors viz., Foreign Institutional Investor (FII) flows and Current Account Balance play a dominant

role in determining the forward premia on USD/ INR rather than the usual interest rate differential between Indian and US economy (Sharma & Mitra, 2006). The outcomes of forward hedging during the study period, whether it is gain or loss, indicates the failure of the strategy to make accurate the prediction of prices. The findings support the past studies and literature acclaiming weak form efficiency of Indian foreign

exchange markets and ‘random walk’ behaviour of rupee-dollar exchange rates and forward premium (%) rate.

A failure is defined as an event that occurs when the delivered service deviates from correct service (Afsharnia 2017). Attribution theory views people as rational information processors whose actions are influenced by their causal inferences. It is not merely the judgment that the product has failed that determines consumer response. People try to determine why the product failed; the type of reason inferred influences what they do (Folkes, 1984). Forward contract is a financial product and the inability in predicting accurate forward rate is deficiency of the product. This provides a logical answer to the aversion towards the derivative product.

II. Volatility

The study analysed forward premium (in percent)

Table 3: Volatility in forward contract (%) values.

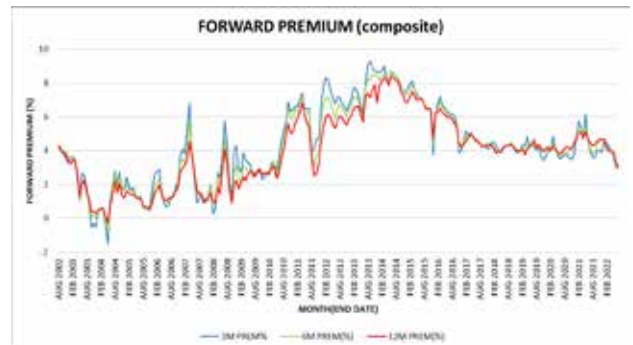
Value	3 Month	6 Month	12 Month
Low	-1.5150 (May 2004)	-0.8000 (May 2004)	-0.3000 (May 2004)
High	9.2650 (Sep 2013)	8.7100 (June 2014)	8.4200 (June 2014)
Median	4.0475	4.0900	4.0850
Standard Deviation	2.34	2.21	2.08

Source: Thomson Reuters database

The result of the study revealed that the forward market hedge has ended at loss in two-third of the sampled observations, despite the average amount of gain per month is greater than that of loss. However, rupee appreciation in spot markets over and above the forward markets results in losses to forward market buyers, while the same phenomenon produces gains to sellers. Accordingly, during the

of INR-USD for three different maturities (3 month forward, 6 month forward and 12 month forward) by using data pertains to the period August 2002 to April 2022.

Figure 3: Forward market premium



Source: Thomson Reuters database

A critical observation of the study is the level of volatility in premium (%) values among different months. The monthly values of forward premium (%) were highly volatile and the severity is extensive as represented.

most part of observations, profit of forward market hedge had been in favour of exporters from India. International trade in India is skewed towards outflow of foreign currencies, documented by the perennial presence of trade deficits. Importers, oil companies and foreign currency borrowers are the potential forward market buyers in the country. The trading volume of US dollar buying outnumbered selling every

month. The forward market behaviour could tempt the dollar buyers to keep their position unhedged, as a profit generation strategy. At the same time, the steady weakening of the rupee against the dollar could induce many foreign currency sellers to keep their position open, anticipating more profit. Overall, the financial behaviour of stakeholders in the country could be of indifferent towards forward contracts.

III. Additional risk

Forward contracts are advocated as one of the effective hedging tools to mitigate the exchange risk. But the stochastic movements of interest rates will generate a new and additional risk for the users of forward contracts. Exchange rates and international interest rates are indeed intermingled, so that it is inconsistent to assume the former stochastic and the latter deterministic (Lioui & Poncet, 2002). When a forward contract is used, the value of underlying asset will be locked till the maturity of the contract. Marking - to - market these assets by discounting them at the current date with the prevailing rate will generate an additional interest rate risk. In the cases of forward contracts for longer maturities, this new risk will be more prominent. Hence, hedging strategy, itself create additional risk and that makes the product more complicated and reasonably unpopular.

IV. Awareness deficiency

Per Alkeback & Niclas Hagelin had made an international comparative study on the usage of derivative products and results showed lack of knowledge about derivatives within the firm was the issue of most concern for financial directors (Alkeback & Hagelin, 1999). Several studies in the Indian context have also been taken place. Findings from two of such studies are quoted below. Quite a few do not have adequate knowledge of the use of derivatives (Debasish, 2008). Awareness about the

various uses of currency derivatives can help investors to reduce risk and increase profits as the lack of knowledge appears to be the most significant barrier to investors (Pahuja & Sehgal, 2012) leading to a rise in the demand for risk management instruments for hedging exposure linked to real and financial flows. This volatility in financial markets requires investors (individual as well as corporate). Financial literacy has not yet reached to a matured level in India. Many of the entities and individuals of the country, who are exposed to international financial markets are not aware about the exchange risk and risk mitigation techniques. Except some very large business houses, majority of the business entities are not equipped with a dedicated treasury desk and not having the presence of personnel with good expertise in FERM. Bankers are providing the basic tips of exchange risk management to the public in most of the cases. But service of bankers is largely confined to their asset holding clients, with an intention to protect bank's own financial interest. This could be one of the reasons for the lack of enthusiasm for forward contracts.

V. Policy changes

Foreign exchange transactions in the country must be done in strict conformity with the rules and regulations promulgated by the central bank from time to time. Foreign currency exchange, forward contracts must be routed only through commercial banks, authorised by the regulator. Usage of hedging tools like forward contracts is regulated by the periodical directions issued by the Reserve bank of India. We can notice that lot of changes are taking place in regulatory directions regarding the booking, cancellation, rebooking of forward contracts. Sometimes directions will be changed regarding underlying exposure and substitution of such assets. Intention behind issuing these directions is to curb unwanted speculation in foreign exchange market. But sometimes frequent

changes will act as an impediment in flourishing the forward contract market.

VI. Complacency

The foreign exchange market of India was highly regulated till the recent past. After the introduction of Foreign Exchange Management Act, (FEMA), 1999, on 1st May 2000, which has replaced Foreign Exchange Regulation Act (FERA), 1973, regulatory culture has been substituted by management culture in foreign exchange dealings. Exchange rate stability is ensured by the regulator, but without a fixed target or band. Nevertheless, this experience has led to complacency in FERM. Importers have a notion that central bank will always intervene to halt sudden declines in rupee value and exporters feel that rupee has only unidirectional movement of decline. This peculiar mindset by the stakeholders leads to the reduced usage of forward contracts.

Conclusion

Foreign exchange market in India is volatile and exchange rate follows a random walk. Surprisingly, most of the players in the market are lazy in following an efficient exchange risk management. Even the trade volume of forward contracts, a plain vanilla derivative instrument, is abysmally low. The study is a systematic investigation to find out the probable factors leading to the paradox. In the study, forward premium (%) of INR-USD for three different maturities (3 month forward, 6 month forward and 12 month forward) were analysed by using data pertains to the period between August 2002 to April 2022. The analysis was confined to the INR/US dollar currency pair, as about 85% of transactions in the Indian foreign exchange market is denominated in this currency pair. The results of the study confirmed that Indian foreign exchange markets are weak form efficient, and that exchange rates and forward premia follow a 'random walk'. The findings are in conformity with most of the past studies and literature. The analysis confirmed

that in the case of 698 out of the 699 observations, the actual spot exchange rate was either higher or lower from the corresponding (forward) rate calculated by using market forward premium.

Further, the study reasoned that higher level of divergence in spot rates and forward rates, volatility of forward premia, additional risk generation due to the stochastic movement of interest rates, lack of awareness, repeated rule changes and habitual complacency are the probable reasons for the low usage of foreign currency forward contracts in India.

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