Chapter 1 – Introduction

1.1 Introduction

Business entities involved in overseas trade are exposed to fluctuations in foreign currency exchange rates. If the domestic currency strengthens, an importer gains and the exporter is at a disadvantage (with regard to the expected future transactions designated in foreign currency). However, if the foreign currency strengthens and the domestic currency weakens than the importer stands to lose and exporter may gain. To reduce volatility in cash flows the businesses may go for hedging their foreign currency exposures. Derivatives like the Currency Futures, Currency Forwards and Currency Options are available to hedge currency exposure arising out of import or export transactions. A brief explanation on them is in order.

Currency Forward – It is an agreement to buy or sell a stated amount of foreign currency at a future date. The price (Exchange rate) of the foreign currency is fixed at the time of entering into the contract. The rate fixed is referred to as the Forward rate. Banks in India offer these contracts to importers and exporters.

Currency Futures – Futures are similar to Forwards in terms of definition. However the major difference is that they are standardized contracts traded on recognized exchanges and hence transparency and price discovery may be better. The differences are highlighted in Table 1.

Currency Options: These are agreements which give the buyer of the option, the right to either buy (Call) the foreign currency or sell (Put) the foreign currency.

Call Option on a foreign currency – The holder of the Call Option has the right to buy (but no obligation), a stated amount of foreign currency on or before a stated date in future (exercise date/ strike date) for a stated price/exchange rate (Strike price / exercise price). For this the Call option buyer has to pay a price called the Premium to the Call Writer (seller).

Put option on Foreign Currency – The holder of a Put Option gets the right to sell the foreign currency at a Strike price by /on the Strike date. For this the Put holder pays the price called Premium to the Put Writer (seller)

A comparison of Currency Forwards, Currency Futures and Currency Options is tabulated below:

Table 1.1 Salient features of Currency Forwards, Currency Futures, and Currency Options

Currency Forwards	Currency Futures	Currency Options
OTC products, offered by banks in India	Exchange-traded products available on National Stock Exchange, United Stock Exchange , Bombay Stock Exchange	Exchange-traded, e.g., on NSE and BSE
Can be customized with regard to quantity and date of maturity of a contract	Standardized with respect to quantity (Lot Size) and date of maturity of a contract	Standardized with respect to quantity (Lot Size) and date of maturity of a contract
Importers would buy Forwards while exporters would be sellers in Forwards.	For hedging foreign currency risk, importers will be 'Long' on Currency Futures; Exporters will go 'Short' on Currency Futures.	Importers would buy a CALL Option for hedging and exporters will buy a PUT option for hedging.
Effective buying price of foreign currency will be the contractual price (adjusted for attendant charges). If the foreign currency strengthens then the importer is protected. However if the exchange rate moves downwards the importer	The effective buying and selling prices are similar to Forwards. However in India the Futures are 'CASH' settled and therefore on the futures, hedge will be lifted and settled in cash and the	Call option will be exercised by the importer, only if the domestic currency has weakened more than the strike price. Similarly the Put Option will be exercised by the exporter only if foreign currency has weakened more

is obligated to buy at the contracted price. For the exporter, the effective selling price is the contractual price (adjusted for attendant charges) and if the domestic currency strengthens then the exporter is protected; however if the foreign currency strengthens, then the exporter will not be able to realize the potential gain.	currency requirement will be met from the SPOT market. Offsetting /Square off of original hedge before intended date is easier.	than the Strike. In case of options, if the exchange rate moves favourably, the option might not be exercised and upside potential may be maintained. If the domestic currency gets stronger and foreign currency is available below the Strike price, the importer may not exercise the call and instead, act on the advantage of a lower exchange rate available in the Spot market.
The major costs involved in a Forward transaction will be bank's Commission/Charges. It is also important to see if there is a difference in the Forward rate offered as compared to Futures.	The costs involved in the Futures would be Brokerage, and Interest cost on Margin to be posted	The major cost of Options would be the Premium paid and brokerage applicable to the Options transactions

From the preceding tabulation it is observed that all the derivatives, i.e., Forwards, Futures and Options offer hedging opportunities. Options, however, have an additional feature of maintaining the upside profit potential in case the exchange rate moves in favour of the hedger.

1.2 Currency Derivatives in India

In India, the business entities have traditionally relied upon Currency Forwards offered by the commercial banks. These Forwards are subject to the provisions of Foreign Exchange Management Act (FEMA), 1999. FEMA requires that an entity entering into a Forward contract should have an underlying foreign currency exposure. There is some relaxation for SME in terms of not having to go through rigorous documentation before entering into a Forward. With the advent of liberalization and cross border flows becoming prominent it was felt that there should be a wider array of hedging choices available to Indian exporters and importers. RBI constituted an internal working group, in 2007, to study the introduction of Currency Futures and Currency Options which are exchange-traded products unlike Forwards which are OTC products. It was felt that this enhanced choice of hedging instruments would supplement the existing currency derivatives market, increase the depth of the foreign currency market in India and help in better price discovery of foreign exchange rates. It was expected that these exchange-traded products would benefit smaller players like SMEs in providing a cost effective means of hedging. The L.C. Gupta committee, set up by SEBI in 1996, dealt with recommendations for Financial Derivatives at large also opined that introduction of exchange-traded derivatives is aimed at providing effective and cost efficient hedging mechanism for risk. The exchange-traded currency derivatives have since been introduced in India and their salient features have been captured in subsequent section. SWAPS are also a form of currency derivative; however they are used for managing interest rate and currency risks. Therefore, swaps are not part of this research.

1.3 Exchange-traded Currency Derivatives (Futures and Options) in India

Currency futures are traded in India on the NSE since August of 2008. This was an important milestone for the currency market as it widened the choice of hedging instruments available in the country. Traditionally businesses had no choice other than Currency Forwards till the introduction of these exchange-traded products.

Currency Futures are traded on BSE too. The contract specifications for these Currency Futures contracts are very similar and are presented in Table 2.

Table 1.2 Currency Futures specifications

Symbol	**USDINR**	**EURINR**	**GBPINR**	**JPYINR**
Market Type	N	N	N	N
Instrument Type	FUTCUR	FUTCUR	FUTCUR	FUTCUR
Unit of trading	Unit of trading is number of contracts. One contract denotes 1000 USD.	Unit of trading is number of contracts. One contract denotes 1000 Euro.	Unit of trading is number of contracts. One contract denotes 1000 POUND STERLING.	Unit of trading is number of contracts. One contract denotes 100000 JAPANESE YEN.
Underlying / Order Quotation	The exchange rate in Indian Rupees for US Dollars	The exchange rate in Indian Rupees for Euro.	The exchange rate in Indian Rupees for Pound Sterling.	The exchange rate in Indian Rupees for 100 Japanese Yen.
Tick size	0.25 paise or INR 0.0025			
Trading hours	Monday to Friday 9:00 a.m. to 5:00 p.m.			
Contract trading cycle	Contracts with expiry ranging from one month to twelve months are traded.			
Last trading day	Two working days prior to the last business day of the expiry month at 12:30 pm.			
Final settlement day	Last working day (excluding Saturdays) of the expiry month. The last working day will be the same as that for Interbank Settlements in Mumbai.			

Source: National Stock Exchange – (www.nseindia.com)

A client is allowed an exposure of US$ 15 million in US$ currency futures and for EURO, Pound Sterling (GBP) and Japanese Yen (JPY) a combined limit of US$ 5 million is allowed. The conversion factors for EURO, GBP and JPY are provided by the exchange.

Option contracts are available on US$ only, unlike Currency Futures which are available on EURO, Pound Sterling and Japanese Yen. The option contract specification is tabulated in Table 1.3 below:

Table 1.3 Currency Option specification

Symbol	USDINR
Market type	N
Instrument type	OPTCUR
Option type	Premium style European Call and Put Options
Premium	Premium quoted in INR.
Unit of trading	1 contract unit denotes USD 1000
Underlying / Order Quotation	The exchange rate in Indian Rupees for US Dollars
Tick size	0.25 paise i.e. INR 0.0025
Trading hours	Monday to Friday 9:00 a.m. to 5:00 p.m.
Contract trading cycle	12 months trading cycle
Strike price	12 In-the-money, 12 Out-of-the-money and 1 Near-the-money. (25 CE and 25 PE)
Strike price intervals	INR 0.25

Source: National Stock Exchange – (www.nseindia.com)

The risk management mechanism for Currency Futures is based on 'margin' being collected from the participants. For Futures contracts, margin is collected for a long as well as short positions, while for the Options contract the person selling (going Short) on the Option is required to pay the margin. The buyer of an option needs to pay the Premium.

The trading volume in currency derivatives has grown manifold since their introduction. This is evidenced by the fact that the average daily turnover on the NSE has grown from Rs. 1167.43 crores in 2008-09 to Rs. 18,602.83 crores in 2015-16. Till 2015-16 the volumes were dominated by Currency Futures. The Options volumes began gradually catching up in 2016-2017.

1.4 NSE's Trading and Clearing Mechanism for Currency Futures

The trading in currency derivatives on NSE is done on an electronic platform. The anonymous order driven system of the exchange is operated such that NSE (through NSCCL) stands as the counter party to each trade guaranteeing its settlement. The orders are executed on price-time priority basis. To safeguard the exchange against undesirable defaults, margining system is followed. All trading members need to collect an upfront margin from their clients and remit the same to the exchange. The margin is specified by the exchange based on estimates of risk (extreme loss value). NSE uses the SPAN (Standard Portfolio Analysis of Risk) to estimate risk. Open positions are marked-to-market on a daily basis and the shortfall/excess margin is collected/remitted to clients on a T+1 basis. The settlement price is the weighted average price of the last half an hour of trading. The final settlement is done based on RBI reference rate.

1.5 Rationale for the study

One of the objectives of introducing Currency Futures in India was to provide a cost effective hedging alternative in addition to the extant Currency Forwards, especially to benefit smaller players like the SMEs. The larger players are in a position to bargain for beneficial Forward rates unlike their smaller counterparts. With exchange-traded Futures being made available to market participants (including speculators), it is expected that the hedging cost would trend downwards. ***Has this really happened?*** The motivation behind this study is to explore the answer to this question. Could the exporters/importers that have traditionally used Forwards (OTC) from banks benefit more by using exchange-traded derivatives? The benefit or effectiveness of hedging by exchange-traded derivatives can be gauged by comparing the effective exchange rate realized under carefully constructed notional hedges with the exchange rate actually realized using Forwards as the hedging tool.