



An investment called India

# CURRENCY OPTIONS

## CURRENCY DERIVATIVES CURRENCY OPTIONS

Extensive globalization and liberalization of Indian economy has led to an increase in the quantum of transactions in the foreign exchange market – the largest and most liquid financial market in the world. Volatility of exchange rates affect the value of a corporate's operating cash flows, income statement, and its competitive position. It affects the balance sheet by changing the value of the firm's assets and liabilities, accounts payable, accounts receivables, inventory etc. This has led to a requirement of a broad based, active and liquid forex derivatives market to provide a basket of hedging instruments for effective management of foreign exchange exposures..

Currency Derivatives has also emerged as an important and interesting new asset class for investors. Launch of Currency options would now provide an opportunity to take a view on Exchange Rate and fulfill both investment and hedging objectives.

### What is an Option?

An option is a contract which gives the options buyer the right, but not the obligation, to buy or sell the underlying at a stated date and at a stated price. A call option gives the right to buy and a put option gives the right to sell. In every currency transaction, one currency is bought and another sold. For example an option to buy US dollars (USD) for Indian rupees (INR) is an USD call and an INR put. Conversely, an option to sell USD for INR is an USD put and an INR call. The other basics like strike price, expiration period, American style or European style are similar to stock options.

### Exchange Traded Currency Options

Exchange traded currency options are standardized products with pre-defined maturities. They are easily accessible when compared with OTC derivatives contracts. Now both individuals and corporates can reap benefit out of the currency options. Options are like insurance contracts, they protect you from the downside at the same time allowing you to reap the benefits of any upside. Rupee options would introduce greater flexibility in risk management of corporate and cost control.

### Factors Influencing Currency Option prices

Parameter	Call Premium	Put Premium
<b>Exchange Rate</b>	As exchange rate increases call premium also increases	As exchange rate increases put premium decrease
<b>Strike Price</b>	As strike rate increases call premium decreases.	As strike rate increases, Put premium also increases
<b>Risk free Interest Rate</b>	As the Interest rate in the economy increases, value of Call option increases	As the Interest rate in the economy increases, value of Put option decreases
<b>Time to maturity</b>	Call & Put options become more valuable as time to maturity increases, it is because of Risk as the time increases.	
<b>Volatility</b>	As volatility increases there is high degree of uncertainty about the rate of the currency and hence on the option. The owner of the call benefits from the rate increase and that of the put benefits from the rate decreases	

### Corporates, Treasury and Risk Management units may consider following points before trading in currency options:

- Calculation of Foreign exchange exposure value and period for which options cover to be taken.
- Measurement of Hedge ratio and degree of risk acceptable to management.
- Expectations and keeping track of exchange rate movements.
- Evaluation and cost benefit analysis of currency option quotes with spot rate and futures rate.

### PRODUCT SPECIFICATIONS

Parameters	Specifications	Remarks
Trading Symbol	USDINR	
Instrument Type	OPTCUR	
Option Type	European Style	
Strike Price Intervals	INR 0.25	
Price Steps	INR 0.0025	
Price operating range	Higher of +/- 99 % of base price or ₹ 1 whichever is higher	
Unit of trading	One contract unit denotes USD 1000	
Underlying	The spot rate in Indian Rupees for US Dollar	
Trading hours	9:00 a.m. to 5:00 p.m. (Monday to Friday)	
Contract trading cycle	3 serial monthly contracts followed by 1 quarterly contract March/June/September/December	On expiry, new far month contracts are introduced
Strike Price	On introduction of new expiry 12 In-the-money, 12 Out-of-the-money and 1 Near-the-money movement	At least 25 Call and 25 Put option intervals. Based on underlying price movement, new strike intervals are introduced.
Position limits	<b>Clients</b> -Higher of 6% of total open interest or USD 10 million. <b>Trading Members</b> - Higher of 15% of total open interest or USD 50 million <b>Banks</b> - Higher of 15% of the total open interest or USD 100 million	The gross open positions across all contracts (both futures and options) shall not exceed the following.
Base price	Daily settlement price or theoretical price for illiquid contracts	
Expiry/Last trading day	Two working days prior to the last business day of the expiry month at 12 noon.	
Final settlement price	RBI reference rate on the date of the expiry of the contract	Cash settled in Indian Rupees
Exercises	On expiry date, all open long in-the-money contracts would be automatically exercised at the final settlement price.	

### Who should trade in Options?

Investors belonging to the following categories, depending on their financial goals and investment objectives may consider trading in options.

- **Investors** who want to participate in the forex market without trading or holding any currency.

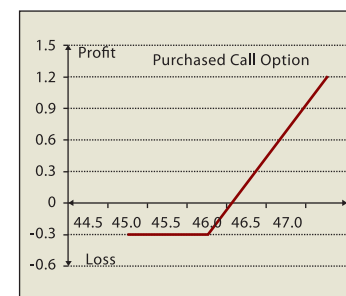
- **Speculator** who have strong views on the currency market and its future movement
- **Hedgers** who want to protect the value of their remittance.

### Currency Option Hedging Strategies

#### A) Currency option strategy for Import transactions

**Purchased Call option:** On 1st August 2010, XYZ buys a USD call option for covering its import transactions, at a strike rate of 45.50. The expiry date is 3 months i.e. 31st October 2010. The premium is 30 paise on the call. Gain or loss on expiry at various levels of exchange rate is demonstrated below vide pay off table and graph.

Market Rate	Exercise Rate	Premium Paid	Gain/loss
	Call@ 45.50		
44.50	0.00	0.30	-0.30
45.00	0.00	0.30	-0.30
45.50	0.00	0.30	-0.30
46.00	0.50	0.30	0.20
46.50	1.00	0.30	0.70
47.00	1.50	0.30	1.20

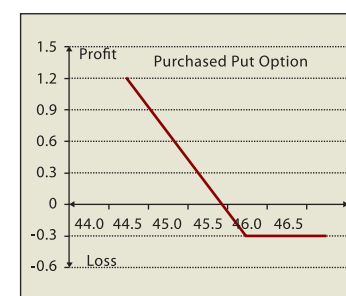


When spot exchange rate rises above the strike price, there are gains, when it falls below the strike price there are losses, which are maximum to the extent of premium paid.

#### B) Currency option strategy for Export transactions

**Purchased Put option:** On 1st August 2010 XYZ buys a USD Put option for covering its export transactions, at a strike rate of 45.50. The expiry date is 3 months i.e. 31st October 2010. The premium is 30 paise on the put. Gain or loss on expiry at various levels of exchange rate is demonstrated below vide pay off table and graph.

Market Rate	Exercise Rate	Premium Paid	Gain/loss
	Put@ 45.50		
44.00	1.50	0.30	1.20
44.50	1.00	0.30	0.70
45.00	0.50	0.30	0.20
45.50	0.00	0.30	-0.30
46.00	0.00	0.30	-0.30
46.50	0.00	0.30	-0.30



When spot exchange rate falls below the strike price, there are gains, when it rises above the strike price there are losses, which are maximum to the extent of premium paid.

### Other different strategies using Options:

Name	Strategy	Payoff	When to use
<b>Long Call</b>	Bullish: Buy Call Option	<b>Profit, when:</b> USDINR goes up & option exercised <b>Loss, when:</b> USDINR does not go up & option expires unexercised	Very bullish on USD
<b>Short Put</b>	Bullish: Short Put Option	<b>Profit, when:</b> USDINR does not go up & option expires unexercised <b>Loss, when:</b> USDINR goes down & option exercised	Not bearish on USD
<b>Call Spread</b>	Bullish: Buy ITM Call & Selling OTM Call	<b>Max profit, when:</b> both options exercised <b>Max loss, when:</b> both options unexercised	Moderately bullish on USD
<b>Put Spread</b>	Bullish: Sell OTM Put & Buy Further OTM Put	<b>Max profit, when:</b> both options unexercised <b>Max loss, when:</b> both options exercised	Moderately bullish on USD
<b>Synthetic Call</b>	Bullish: Buy Futures & Buy Put	<b>Profit, when:</b> USDINR goes up <b>Max loss, when:</b> USDINR goes down & option exercised	Conservatively bullish on USD
<b>Covered Call With Futures</b>	Bullish: Sell OTM Call Option	<b>Max profit, when:</b> USDINR goes up & option exercised <b>loss, when:</b> USDINR goes down	Moderately bullish on existing long futures
<b>Long Put</b>	Bearish: Buy Put Option	<b>Profit, when:</b> USDINR goes down & option exercised <b>Max loss, when:</b> USDINR goes up & option not exercised	Bearish on USD
<b>Short Call</b>	Bearish: Sell Call Option	<b>Max profit, when:</b> USDINR goes down & option not exercised <b>Loss, when:</b> USDINR goes up & option exercised	Very bearish on USD

<b>Call Spread</b>	Bearish: Sell ITM Call & Buy OTM Call	<b>Max profit, when:</b> USDINR goes down & both options not exercised <b>Max loss, when:</b> USDINR goes up & both options exercised	Mildly bearish on USD
<b>Put Spread</b>	Bearish: Buy ITM Put & Sell OTM Put	<b>Max profit, when:</b> USDINR goes down & both options exercised <b>Max loss, when:</b> USDINR goes up & both options unexercised	Moderately bearish on USD
<b>Protective Call/ Synthetic Long Put</b>	Bearish: Sell Futures, Buy Call	<b>Profit, when:</b> USDINR goes down & options not exercised <b>Max loss, when:</b> USDINR goes up & options exercised	Bearish on USD but keep protected against any unexpected rise
<b>Covered Put</b>	Bearish: Sell Futures, Sell OTM Put	<b>Max profit, when:</b> USDINR goes down & option exercised <b>Max loss, when:</b> USDINR goes up & option not exercised	Neutral to bearish on USD
<b>Long Straddle</b>	Neutral: Buy Call & Buy Put Option of Same Strike	<b>Profit, when:</b> one of the option exercised <b>Max loss, when:</b> both the option not exercised	USD will experience significant volatility
<b>Short Straddle</b>	Neutral: Sell Call & Sell Put Option of Same Strike	<b>Max profit, when:</b> both the options not exercised <b>Loss, when:</b> one of the option exercised	USD will experience very little volatility
<b>Long Strangle</b>	Neutral: Buy Slight OTM Call & Put Option	<b>Profit, when:</b> one of the option exercised <b>Max loss, when:</b> both the options not exercised	USD will experience significant volatility
<b>Short Strangle</b>	Neutral: Sell OTM Call & Put Option	<b>Max profit, when:</b> both the options not exercised <b>Loss, when:</b> one of the options exercised	USD will experience very little volatility

## Some basic terminology

**Options** – give the buyer the right but not the obligation either to buy or sell a specified quantity of the underlying at a fixed exercise price on or before the expiration date.

**Call options** –the right to buy a specified quantity of the underlying at a fixed exercise price on or before the expiration date

**Put options** –the right to sell a specified quantity of the underlying at a fixed exercise price on or before the expiration date

**Option holder** –the person who buys the right conveyed by the option

**Option writer** –is obligated if and when assigned an exercise to perform according to the terms of the option, also referred to as option seller.

**Assigned writer** – option writer who has been assigned an exercise is known as an assigned writer

**Strike price / Exercise price** – is the price at which the contract is settled. It is the base for determination of the amount of cash, if any that the option holder is entitled to receive upon exercise.

**Premium** –the price that the holder of an option pays and the writer of an option receives for the rights conveyed by the option.

**Opening Transaction:** A purchase or a sale transaction by which a person establishes or increases a position either as the holder or the writer of an option.

**Closing Transaction:** A transaction by which a person reduces or cancels out previous positions either as the holder or the writer of that option. For example, an investor, at the same point prior to expiration may make an offsetting sale of an identical option, if he is an option holder or make an offsetting purchase of an identical option, if he is an option writer.

**Long and short** – Long refers to a position as the holder of an option. Short refers to a position as the writer of an option.

**Expiration date** – the date on which the option expires. If an option has not been exercised upto its expiration, it ceases to exist after the expiration date, i.e. the option holder shall no longer have any right and the option, no value.

**European style** – options which may be exercised only on the expiration date.

**At the money (ATM)** – means that the current market value of the underlying is the same as the exercise price of the option.

**In the money (ITM)** – A call option is said to be in the money if the current market value of the underlying is above the exercise price of the option. A put option is said to be in the money if the current market value of the underlying is below the exercise price of the option.

**Example:** If the current USDINR is 45.00, USDINR 44.00 call (strike price is 44.00) & USDINR 46.00 put (strike price is 46.00), are in the money.

**Out of the money (OTM)** - A call option is said to be out of the money if the current market value of the underlying is below the exercise price of the option. A put option is said to be out of the money if the current market value of the underlying is above the exercise price of the option.

**Example:** If the current USDINR is 45.00, USDINR 46.00 call (strike price is 46.00) & USDINR 44.00 put (strike price is 44.00), put are out of the money.

**Intrinsic value** – reflects the amount, if any, by which an option is in the money. For call options, this is the difference between the underlying stock's price and the strike price. For put options, it is the difference between the strike price and the underlying stock's price.

## About National Stock Exchange:

The National Stock Exchange (NSE) is India's leading stock exchange covering various cities and towns across the country. NSE was set up by leading institutions to provide a modern fully automated screen-based trading system with national reach. The Exchange has brought about unparalleled transparency, speed & efficiency, safety and market integrity. It has set up facilities that serve as a model for the securities industry in terms of systems, practices and procedures.

NSE has played a catalytic role in reforming the Indian securities market in terms of microstructure, market practices and trading volumes. The market today uses state-of-art information technology to provide an efficient and transparent trading, clearing and settlement mechanism, and has witnessed several innovations in products & services viz. demutualisation of stock exchange governance, screen based trading, compression of settlement cycles, dematerialisation and electronic transfer of securities, securities lending and borrowing, professionalisation of trading members, fine-tuned risk management systems, emergence of clearing corporations to assume counter party risks, market of debt and derivative instruments and intensive use of information technology.

## Milestone

April 93	Recognition as a stock exchange
November 94	Capital Market (Equities) segment goes live
October 95	Became largest stock exchange in the country
April 96	Launch of S&P CNX Nifty
February 00	Commencement of Internet Trading
June 00	Commencement of Derivatives Trading (Index Futures)
June 01	Commencement of trading in Index Options
June 07	NSE launches new index derivatives
January 08	Introduction of Mini Nifty derivative
March 08	Introduction of long term option contracts
April 08	Launch of Securities Lending & Borrowing Scheme, Launch of Vix
August 08	Commencement of Currency Futures Trading
August 09	Launch of Interest Rate Futures
November 09	Launch of Mutual Fund Service System
December 09	Commencement of settlement of corporate bonds
February 10	Launch of Currency Futures on additional currency pairs
March 10	Launch of Hang Sang ETF
July 10	Commencement of trading of S&P CNX Nifty Futures on CME
July 10	Real Time dissemination of India Vix LOI signed with London Stock Exchange

## Disclaimer:

Market conditions can lead to substantial profit or loss. Investors are advised to seek adequate product and market knowledge as well as proper investment advice before trading. The material provided here is for general information purpose only. While care has been taken to ensure accuracy, the information furnished to reader with no warranty as to accuracy or completeness of its contents and on condition that any changes, omissions or errors shall not be made the basis for any claim, demand or cause for action.



## NATIONAL STOCK EXCHANGE OF INDIA LIMITED

Exchange Plaza, Bandra Kurla Complex, Bandra-East, Mumbai 400 051.  
Tel : 022 26598100. Fax: 022 26598449. Email: nsecrm@nse.co.in