

**CATCH THE FUTURE
BRIEFING ON CURRENCY DERIVATIVES**

**CURRENCY FUTURES
HOW DO CORPORATES BENEFIT?**

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**EMERGING
MARKETS
RESOURCE
CENTRE**

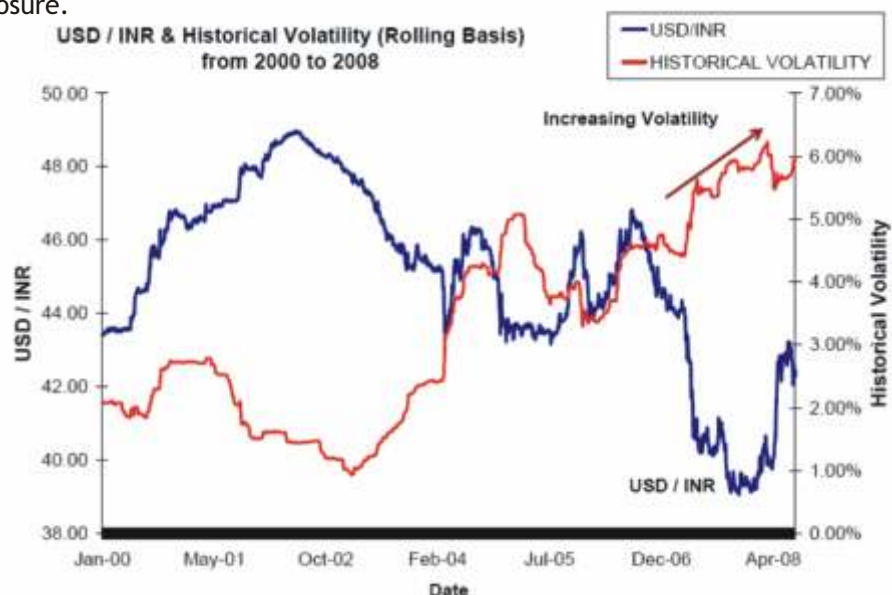
Overview

Currency Futures is the latest product introduced in Indian securities markets. It will lead to further maturity and deepening of the financial markets in India. Worldwide, trading in currency futures is a US\$ 3 trillion (Rs 150 lakh crore) market, and, given the rapid growth of Indian economy, it is poised to assume a significant role in the growth of Indian securities markets.

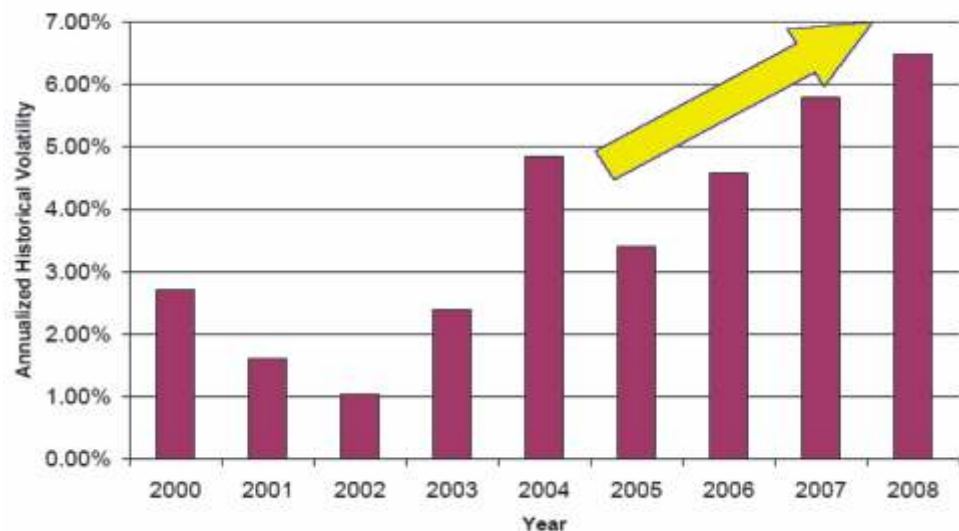
Exchange-traded currency derivatives segment operates under the regulatory control of the Securities & Exchange Board of India (SEBI) and the Reserve Bank of India (RBI). This segment will enable importers, exporters, investors, corporations, and banks to hedge their currency risks at low transaction costs and with greater transparency and safety. Currency futures will benefit small and medium enterprises (SMEs), which have hitherto not had easy access to the currency market.

Why Trade Using Currency Futures?

The liberalization of Indian economy in 1990s and the increasing exports and imports fuelled by higher growth rate in the last five years have led to doubling of volatility in the dollar-rupee (USD/INR) market. These factors, coupled with the integration of global asset classes, increased remittances from non-resident Indians (NRIs), forex cash inflow and outflow by foreign institutional investors (FIIs), have led to increased risk for corporates and their clients having forex exposure.



Annualized Historical Volatility of USD / INR





Extreme volatility in USD/INR has increased the need to mitigate risk by hedging in the derivatives market. Since 1999, corporates have been leveraging on derivatives, including some exotic types in the over-the-counter (OTC) market to mitigate risk. But this has resulted in several corporates exposing themselves to forex losses. Due to the sophisticated nature of exotic derivatives, corporates—large, medium, and small scale—having exposure in the OTC market have made losses well in excess of Rs 27,500 crore since the last financial year.

It was in this perspective that RBI and SEBI have launched currency futures trading. Unlike non-linear derivatives (such as options, swaps, range accruals, swaptions), the pay-off for futures contracts are linear in nature.

INCREASING VOLATILITY OF USD/INR

- Robust economic growth
- Policy liberalization: ECB, FII, FDI investments
- Towards full capital account convertibility
- Liberalized remittance scheme

INCREASING COMMODITY IMPORTS & EXPORTS

- Exponential increase in demand for commodities
- Growing population
- Increasing merchandised trade and services
- Liberalization of the Indian economy

Where Can You Trade in Currency Futures?

MCX Stock Exchange (MCX-SX), the new generation stock exchange, is promoted by Multi Commodity Exchange of India Limited (MCX), India's largest commodity derivatives exchange. MCX-SX was launched on October 7, 2008, after obtaining final approval from RBI and SEBI. MCX-SX will be able to leverage the reach and access of MCX in creating awareness for currency futures.

Major Benefits of Trading Currency Futures on MCX-SX

Some of the major benefits of exchange-traded currency futures contracts on MCX-SX are as follows:

- Easy to understand and interpret—linear derivatives, similar to equity and commodity futures that are already being traded
- Transparent online trading platform on exchanges increases reach across India. State-of-the-art technology—trading through VSAT, leased line, and Internet
- Anonymous order matching facility increases integrity of the order matching system
- Real-time tracking of mark-to-market (MTM) profits / losses—maximum allowable loss limits are tracked
- Robust settlement systems with counterparty guarantee, settlement on T+1 day basis, pay-in of funds (through clearing banks) before commencement of trade on next day eradicates risk of default
- Efficient exchange risk management using SPAN® margining system with VaR (3.50 standard deviations) and additional extreme loss margin of 1% ensures zero default
- Wider membership with a large participation by financial institutions, corporates, forex traders leading to effective price discovery
- Extensive training and awareness programmes to participants

With the launch of currency futures trading on MCX-SX, more than US\$ 400 million to 500 million is traded every day across all currency derivatives exchanges in India.

The primary purpose of exchange-traded derivatives like futures is to provide a mechanism for price risk management and price discovery. Futures market is expected to provide a price curve to enable diverse forex market participants, corporate and retail, to protect their foreign currency exposure and thereby mitigate risk arising from currency volatility in a globalised market.

Understanding the Contract Specification for Trading in USD/INR Futures Contracts

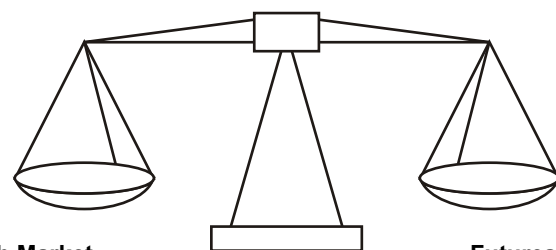
Underlying	USD / INR
Trading Hours	9:00 A.M. to 5:00 P.M.
Contract Lot Size	Minimum Lot Size is US\$ 1,000
Tick Size	Re 0.0025
Tick Value	Rs 2.50
Price Quotation	In INR
Tenor of Contract	Maximum of 12 Months
Available Contracts	Monthly
Settlement Mechanism	In INR
Settlement Reference Rate	RBI USD/INR Reference Rate
Final Settlement Date	Last working day of the month, except Saturday

Who Can Benefit from Currency Futures?

- 1) **Hedgers:** MCX-SX provides an efficient platform for ensuring against risk arising due to volatility in the currency markets. Banks, importers, exporters, and corporates who want to mitigate risk can hedge on MCX-SX at a relatively low entry and exit cost. Banks can also provide this service to their clients. This provides another option for hedging currency exposure. It also increases services income for the banks.
- 2) **Traders:** Traders who are interested in taking short-term positions with a view on appreciation or depreciation of the US dollar against the Indian rupee can also participate in currency futures trading on MCX-SX. Traders provide the liquidity for the market, thereby enabling hedgers to efficiently transfer risk.
- 3) **Arbitragers:** Market participants often get opportunities to exploit the price differential of USD/INR between different markets, for example, intermittent disparity in the USD/INR rate between OTC forward markets and futures markets. Arbitrage process removes any inefficient price differential across different markets.

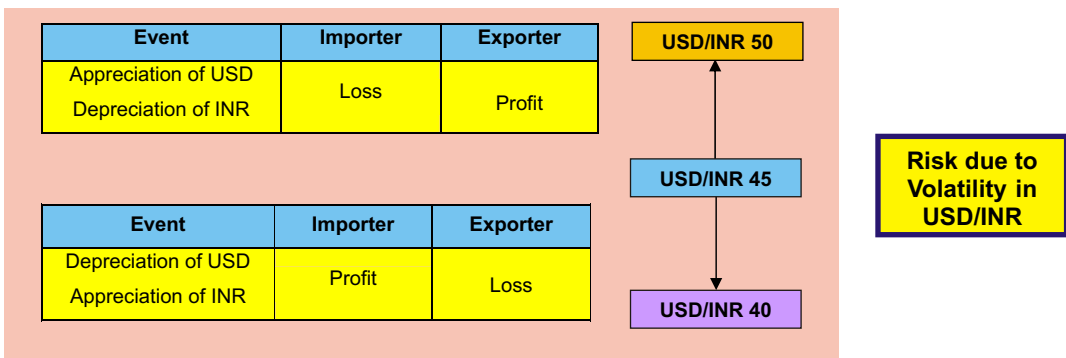
Mechanics of Hedging:

Hedging is taking a position in the futures market, a position that is opposite to the already existing position in the cash market. The objective of hedging is to minimize risk associated with unpredictable changes in the USD/INR rate. In this process, it should be observed that the objective is to lock in a particular USD/INR rate and not to be subjected to favourable as well as unfavourable movement in the exchange rate.

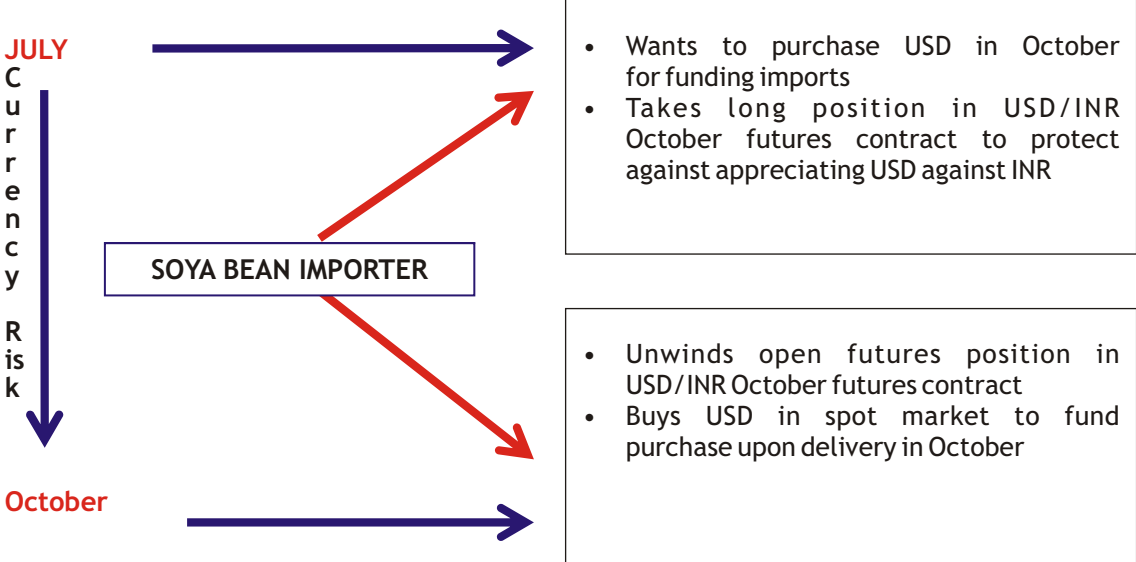


$$\text{Gains / Losses in Cash Market} + \text{Losses / Gains in Futures Market} = \text{Risk Mitigation by locking in USD/INR rate}$$

- A long futures hedge is appropriate when you know you will buy any foreign currency in the future and want to lock in the price.
- A short futures hedge is appropriate when you know you will sell any foreign currency in the future and want to lock in the price.
- The profit (loss) in the cash position is offset by equivalent loss (profit) in the futures position.



Example of Long Hedge by an Importer



An edible oil refiner wants to import soya beans worth USD 100,000. The importer is exposed to risk of INR depreciation against USD. This could potentially increase his import bill. The importer places an order on July 15, 2008, with delivery and payment dates being three months ahead, i.e., in October 2008. The spot rate of USD/INR at the time of booking the import in July is 43.50. If the rupee depreciates by October, this can result in loss for the importer. On the other hand, if the rupee appreciates, this is favourable for the importer. The uncertainty of the movement of the USD/INR is the extent of risk for the importer. The importer decides to hedge against USD/INR volatility using exchange-traded currency futures.

Trading Strategy:

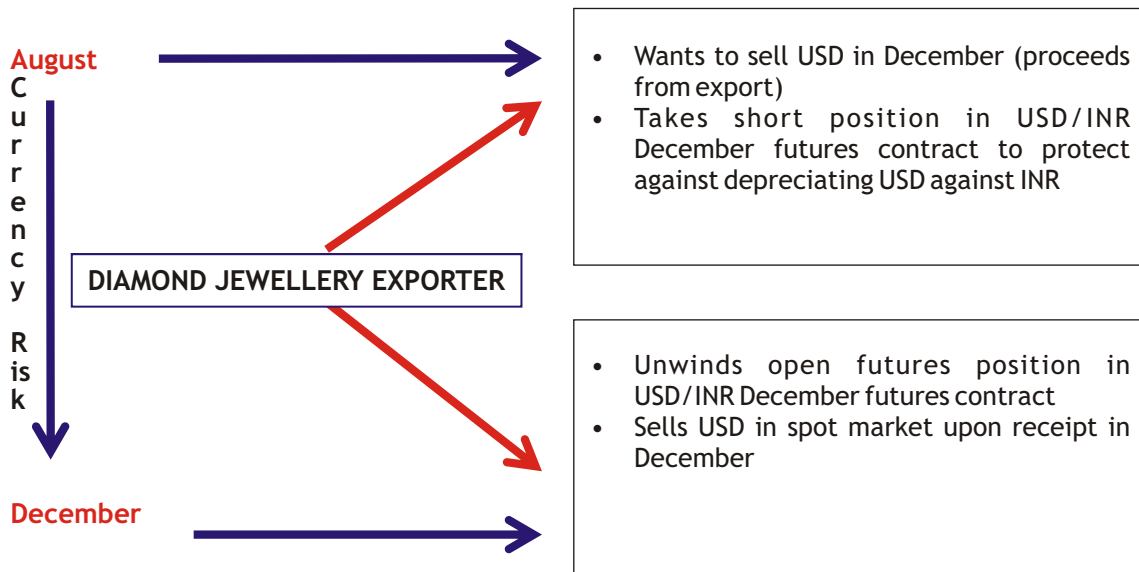
1. Spot rate of USD/INR on July 15, 2008, is 43.50
2. MCX-SX Oct USD/INR futures is trading at 43.50
3. Hedge Strategy: Buys 100 lots of MCX-SX Oct USD/INR futures contracts on July 15, 2008 @ 43.50, which is expiring on October 24, 2008

USD/INR Settlement rate on Oct 24, 08	P/L on Exchange-Traded Currency Futures	P/L in Cash Market for Purchase of USD	Net Profit /Loss
Scenario 1: 48	$(48 - 43.5) \times 100 \text{ lots} \times \1000 = Profit of INR 4,50,000	$(43.50 - 48) \times 100 \text{ lots} \times \1000 = Loss of INR 4,50,000	Zero
Scenario 2: 40	$(40 - 43.5) \times 100 \text{ lots} \times \1000 = Loss of INR 3,50,000	$(43.50 - 40) \times 100 \text{ lots} \times \1000 = Profit of INR 3,50,000	Zero

If the importer had not hedged, his maximum loss (when INR depreciates to 48 against USD) could have been as high as Rs 4,50,000. But the importer has managed to reduce his risk by locking in the USD/INR purchase price of 43.50 by hedging on exchange-traded currency futures.

However, in practice, one does not get the futures contracts at underlying spot rate. It is either at higher or lower rate. In the above case, if Oct USD/INR had been available at Rs 44, then in both the scenarios, it would have been a loss of Rs 50,000. Alternatively, if the futures had been available at Rs 43, then in both the scenarios, it would have been a profit of Rs 50,000. This is also known as the basis risk.

Example of Short Hedge by an Exporter



A diamond jewellery exporter has got an export order worth USD 250,000 on August 20, 2008, for the delivery of jewellery against payment in December 2008. The exporter is exposed to risk of INR appreciation against USD. This could potentially decrease his revenues from export. The spot rate of USD/INR at the time of booking the export in August is 45.50. If the rupee appreciates by December, this can result in loss for the exporter. On the other hand, if the rupee depreciates, this is favourable for the exporter. The uncertainty of the movement of the USD/INR rate is the extent of risk for the exporter. The exporter decides to hedge against USD/INR volatility using exchange-traded currency futures.

Trading Strategy

1. Spot rate of USD/INR on August 20, 2008, is 45.50
2. MCX-SX Dec USD/INR futures is trading at 46
3. Hedge Strategy: Sells 250 lots of MCX-SX Dec USD/INR futures contracts on August 20, 2008 @ 46, which is expiring on December 29, 2008

USD/INR settlement rate on Dec 29, 08	P/L on Exchange-Traded Currency Futures	P/L in Cash Market for Purchase of USD	Net Profit /Loss
Scenario 1: 43	$(46 - 43) \times 250 \text{ lots} \times \1000 = Profit of INR 7,50,000	$(43 - 45.50) \times 100 \text{ lots} \times \1000 = Loss of INR 6,25,000	Net Profit of INR 1,25,000
Scenario 2: 49	$(46 - 49) \times 100 \text{ lots} \times \1000 = Loss of INR 7,50,000	$(49 - 45.50) \times 100 \text{ lots} \times \1000 = Profit of INR 8,75,000	Net Profit of INR 1,25,000

If the exporter had not hedged, his loss (when INR appreciates to 43 against USD) could have been as high as Rs 6,25,000. But the exporter has managed to reduce his risk by locking in the USD/INR selling price of 46 by hedging on exchange-traded currency futures. In this case, as explained in the previous example, the basis risk is in favour of the exporter.

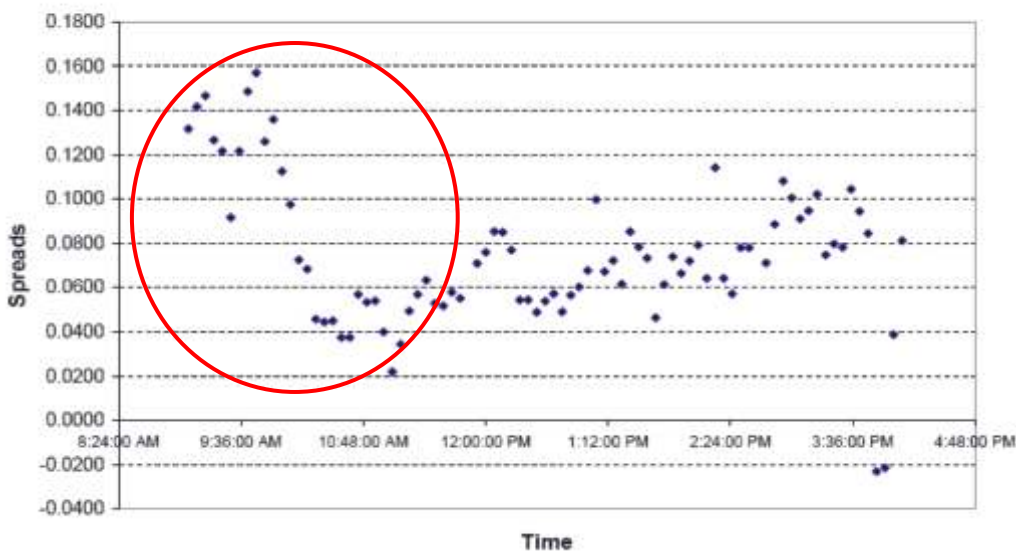
Arbitrage between OTC forward markets and futures markets

Corporates having exposure to imports and exports can take opposite positions in OTC forward markets and exchange-traded futures markets. For example, take long position in OTC forward market and short position in MCX-SX USD/INR futures contract. Both ultimately will be settled based on the RBI reference rate on expiry.

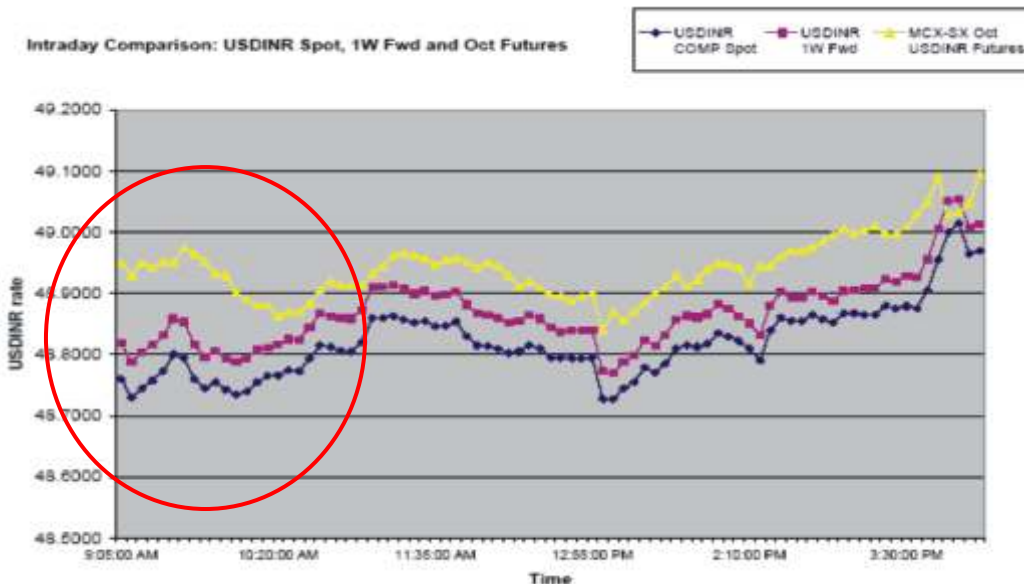
Arbitrage can potentially exist between currency futures, OTC forwards and the non-deliverable forwards (NDFs) trading offshore. An arbitrage can be executed by an entity having access to any two of the above. Corporate entities with an underlying exposure, can straddle both markets, e.g. *Sell USD/INR currency futures and simultaneously buy forward contract in the OTC market for the same expiry.*

This scenario can exist when currency futures are trading higher / lower than forwards. The difference between the spot and forward / futures is theoretically governed by interest rate differentials and USD supply with banks. Restricted access to the OTC and NDF markets could also translate to price differentials between different markets, leading to arbitrage opportunities.

Intraday Spreads - 1 Week Fwd vs MCX-SX Oct Futures 1W Fwd vs. MCX-SX Oct Fut

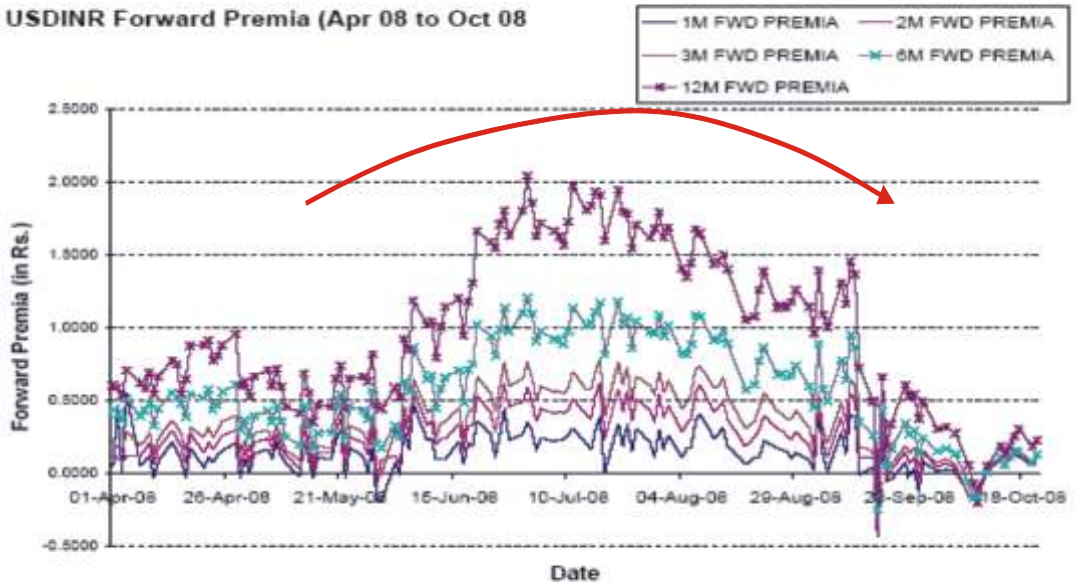


Intraday Comparison: USDINR Spot, 1W Fwd and Oct Futures





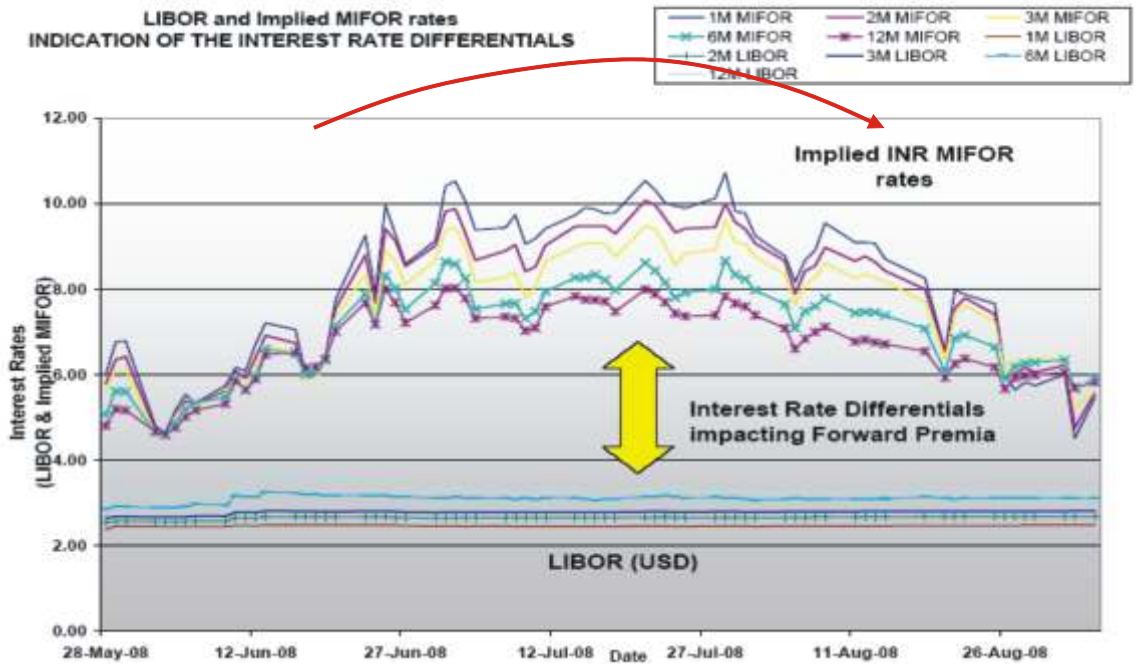
USDINR Forward Premia (Apr 08 to Oct 08)



The forward rate premia is a function of the interest rate differential between the domestic currency (INR) interest rates and foreign currency (USD) interest rates. It may be observed that when the interest rate differential increases, the forward rate premia also increases.

Interest Rate Differential and OTC Forward Market Premia

LIBOR and Implied MIFOR rates
INDICATION OF THE INTEREST RATE DIFFERENTIALS



Frequently Asked Questions

1. What are the major differences between OTC and Exchange-traded derivatives market?

Attribute	Over-the-Counter Forward Market	Exchange-Traded Currency Futures Market
<i>Accessibility</i>	Inter-bank market accessed through telephone	Online electronic trading through leased line, VSAT, Internet
<i>Price Transparency</i>	High bid-ask spread due to high transaction cost owing to bank charges	Transparent online trading platform ensures uniform real-time price access for all market participants
<i>Contract Size</i>	Customized. Banks prefer forward contracts for at least US\$ 1 million	Standard futures contract lot size as low as US\$ 1,000
<i>Credit Exposure</i>	Counterparty default risk exists	No counterparty default risk due to novation and settlement guarantee by clearing house
<i>Settlement</i>	Settlement only on maturity date in case of profits from cancelled forward contracts. Loss to be paid immediately	Settlement only in INR based on mark-to-market T+1 day basis
<i>Proof of underlying import / export exposure</i>	Mandatory as per RBI guidelines	Position limits for open interest exists: <ul style="list-style-type: none"> ■ Clients: Higher of 6% of open interest or US\$ 5 million ■ Members: Higher of 15% of open interest or US\$ 25 million ■ Banks: Higher of 15% of open interest or US\$ 100 million
<i>Delivery Date</i>	Customized	Standardized
<i>Margin Deposits</i>	Compensating bank balances or credit lines needed (such as FD, Bank Guarantee, etc.). Usually ranges from 5% to 10% depending on the credit profile of client	Margin is as low as 3% to 5% of total exposure. Tracked on real-time basis using Value-at-Risk (VaR) measures
<i>Participants</i>	Banks, Corporates having mandatory exposure to forex through imports / exports	Wider participation by all strata of market participants, including banks, corporates, retail, investors, etc. Based on position limits mentioned above
<i>Clearing Operation</i>	Handled by individual authorised forex intermediaries – banks	Handled by exchange clearing house with 100% guarantee against default
<i>Transaction cost</i>	Bank's bid-ask spread	Negotiated brokerage fees

What is in it for you?

- A new asset class
- More efficient risk management through hedging available to SMEs, small corporates, and retail investors



2. What is a currency futures contract?

A currency futures contract is a standardized forward contract that is traded on an exchange. It is an agreement to buy or sell a particular currency in the future at a specified rate and at a specified date. For example, buying one lot of December, 200X, USD/INR at 49.50 on 17th November, 200X, means the buyer has agreed to buy USD 1,000 at the rate of INR 49.50 per USD on 29th December, 200X, assuming 29th December, 200X, is the maturity date for December 200X USD/INR Futures.

3. What are the factors that affect the exchange rate of a currency?

A country's currency exchange rate is typically affected by the supply and demand for the country's currency in the international foreign exchange market. The demand and supply dynamics is principally influenced by factors like interest rates, inflation, trade balance, and the state of economic and political affairs in the country. The level of confidence in the economy of a particular country also influences the currency of that country.

4. What are the benefits of exchange-traded currency futures over existing currency forward market in India?

Though the exchange-traded futures, as compared to OTC forwards, serve the same economic purpose, they offer the following advantages over OTC forward contracts:

- They are standardized contracts.
- Market lot is fixed at far smaller size to enable even small corporates and investors to hedge and participate in the market.
- Equal treatment, in terms of price, is provided to all investors whether large or small.
- Exchange-traded market offers greater transparency, efficiency, and accessibility.
- No counterparty default risk.

Thus, introduction of exchange-traded currency futures help in the overall development of the currency market in the country.

5. Who can participate in exchange -traded currency futures market?

Any resident Indian entity, including banks and financial institutions, can participate in the futures market. However, at present, foreign institutional investors (FIIs) and non-resident Indians (NRIs) are not permitted to participate in exchange-traded futures market.

6. In which currency are the USD/INR contracts settled?

These contracts are settled in cash in Indian rupee.

7. What is the meaning of non-deliverable forwards (NDFs) or OTC offshore markets?

OTC forward contracts for USD/INR are also traded outside India by multinational banks and foreign institutional investors. But due to limited participation outside India, the market is usually illiquid and hence, the forward prices are at a steep premium or discount. These contracts are also cash-settled based on the RBI reference rate.



8. What is the RBI reference rate and when is it disseminated?

RBI provides a benchmark reference rate for USD/INR and other currency pairs at approximately 12:00 Noon to 12:30 PM on all working days when currency markets are open. The RBI reference rate is considered as the benchmark rate for import / export transactions in the spot market for settlement purpose.

9. What is the basis of settlement on expiry of futures contract and OTC forward contracts (both on-shore and offshore)?

The basis of settlement in the exchange-traded USD/INR futures segment as well as OTC on-shore and offshore is the RBI reference rate.

10. How can investors leverage on arbitrage opportunities between the different markets?

Any price discrepancy between the different markets, namely futures markets and OTC forward markets, can be leveraged for arbitrage; since the final settlement rate across all markets is the RBI reference rate.

Benefits of Currency Futures

- Linear Payoff, not complicated for market participants to understand
- Standardized Contracts, small lot size US\$ 1,000
- Electronic Settlement of MTM Profit/Loss
- No counterparty default risk, novation by clearing house
- Efficient price discovery due to high liquidity
- Large number of market participants
- Transparency, real time dissemination of prices
- Access through Internet from remote locations
- Additional tool for hedging currency risk
- Broader participation, leading to enlarged forex market
- Permit trades other than hedges with a view to moving gradually towards fuller capital account convertibility
- Enhanced retail participation
- Efficient method of credit risk transfer through the Exchange
- Facilitate large volume transactions
- Trade match is anonymous
- Well-regulated structure
- Ready national level reference rates at any point of time during trading hours
- Impact cost is higher when corporates take forward contracts in OTC market
- Wide bid-ask spreads at the time of cancellation of forward contracts can reduce the hedge cover
- Cash inflows for corporates from cancelled forward contracts with banks will be available on expiry of the hedge period as against daily MTM settlement in currency futures exchanges



■ KNOWLEDGE *for* MARKETS ■

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Debt

Commodities

Currency

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S E R V I C E S

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