

Currency Derivatives Segment

7

Currency Derivatives Segment

This chapter on currency derivatives segment is broadly divided into two parts: Currency Futures and Interest Rate futures. The Currency Derivatives segment at NSE commenced operations on August 29, 2008 with the launch of currency futures trading in US Dollar-India Rupee (USD-INR). Trading in other currency pairs like Euro-INR, Pound Sterling-INR and Japanese Yen-INR was further made available for trading in March 2010. On the same segment, interest rate futures were introduced for trading on August 31, 2009.

Trading Mechanism

The Currency derivatives trading system of NSE, called NEAT-CDS (National Exchange for Automated Trading - Currency Derivatives Segment) trading system, provides a fully automated screen-based trading for currency futures on a nationwide basis as well as an online monitoring and surveillance mechanism. Two products, currency futures and interest rate futures trade on this segment.

The NEAT-CDS system supports an order driven market, wherein orders match automatically. Order matching is essentially on the basis of security, its price and time. All quantity fields are in contracts and price in Indian rupees. The exchange notifies the contract size and tick size for each of the contracts traded on this segment from time to time. When any order enters the trading system, it is an active order. It tries to find a match on the opposite side of the book. If it finds a match, a trade is generated. If it does not find a match, the order becomes passive and sits in the respective order book in the system.

Currency Futures

The contract specification, trading, clearing and settlement mechanism for currency futures is explained below.

Contract Specifications for Currency Futures

NSE trades Currency Derivatives contracts having near 12 calendar month expiry cycles. All contracts expire two working days prior to the last working day of every calendar month (subject to holiday calendars). This is also the last trading day for the expiring contract. The contract would cease to trade at 12:00 noon on the last trading day. A new contract with 12th month expiry would be introduced immediately ensuring availability of 12 monthly contracts for trading at any point.

Each futures contract has a separate limit order book. All passive orders are stacked in the system in terms of price-time priority and trades take place at the passive order price (order which has come earlier and residing in the system). The best buy order for a given futures contract will be the order to buy at the highest price whereas the best sell order will be the order to sell at the lowest price.

The contract specification for US Dollars - Indian Rupee (USDINR), Euro - Indian Rupee (EURINR), Pound sterling - Indian Rupee (GBPINR) and Japanese Yen - Indian Rupee (JPYINR) is summarized in the table below.

Symbol	USD-INR	EUR-INR	GBP-INR	JPY-INR	
Market Type	Normal	Normal	Normal	Normal	
Instrument Type	FUTCUR	FUTCUR	FUTCUR	FUTCUR	
Unit of trading	1 - 1 unit denotes 1000 USD.	1 - 1 unit denotes 1000 EURO.	1 - 1 unit denotes 1000 POUND STERLING.	1 - 1 unit 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	9:00 am to 5:00 pm (Monday to Friday on working days)				
Contract trading cycle	12 month trading cycle.				
Last trading day	Two working days prior to the last business day of the expiry month at 12 noon.				
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.				
Quantity Freeze	10,001 or greater				
Base price	DSP of the contract.				
Price operating range	Tenure upto 6 months	+/- 3 % of base price.			
	Tenure greater than 6 months	+/- 5% of base price.			
Position limits	Clients	higher of 6% of total open interest or USD 10 million	higher of 6% of total open interest or EURO 5 million	higher of 6% of total open interest or GBP 5 million	higher of 6% of total open interest or JPY 200 million
	Trading Members	higher of 15% of the total open interest or USD 50 million	higher of 15% of the total open interest or EURO 25 million	higher of 15% of the total open interest or GBP 25 million	higher of 15% of the total open interest or JPY 1000 million
	Banks	higher of 15% of the total open interest or USD 100 million	higher of 15% of the total open interest or EURO 50 million	higher of 15% of the total open interest or GBP 50 million	higher of 15% of the total open interest or JPY 2000 million
Initial margin	SPAN Based Margin				
Extreme loss margin	1% of MTM value of gross open position	0.3% of MTM value of gross open position	0.5% of MTM value of gross open position	0.7% of MTM value of gross open position	

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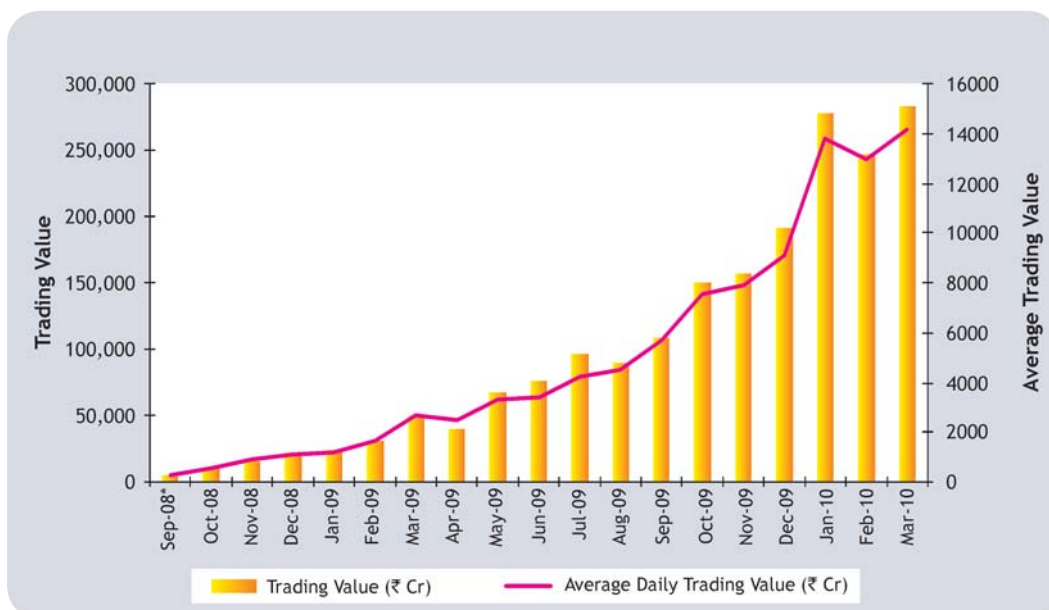
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Symbol	USD-INR	EUR-INR	GBP-INR	JPY-INR
Calendar spreads	₹ 400 for spread of 1 month	₹ 700 for spread of 1 month	₹ 1500 for spread of 1 month	₹ 600 for spread of 1 month
	₹ 500 for spread of 2 months	₹ 1000 for spread of 2 months	₹ 1800 for spread of 2 months	₹ 1000 for spread of 2 months
	₹ 800 for spread of 3 months	₹ 1500 for spread of 3 months and more	₹ 2000 for spread of 3 months and more	₹ 1500 for spread of 3 months and more
	₹ 1000 for spread of 4 months and more			
Settlement	Daily settlement : T + 1			
	Final settlement : T + 2			
Mode of settlement	Cash settled in Indian Rupees			
Daily settlement price (DSP)	Calculated on the basis of the last half an hour weighted average price.			
Final settlement price (FSP)	RBI reference rate	RBI reference rate	Exchange rate published by RBI in its Press Release captioned RBI reference Rate for US\$ and Euro	Exchange rate published by RBI in its Press Release captioned RBI reference Rate for US\$ and Euro

TURNOVER

The trading activity in currency futures has been witnessing a rapid growth. The total traded volume from August 2008 till March 2009 was ₹ 162,272 crore (US \$ 31,849 million) and increased by 998.53% to ₹ 17,82,608 crore (US \$ 394,907 million) in 2009-10. Total number of contracts traded during 2009-10 were 378,606,983. The average traded volumes during the same period were ₹ 7,428 crore (US \$ 1,645 million). The business growth of Currency Futures Segment is shown in Table 7-1 and Chart 7-1.

Chart 7-1 : Business Growth of Currency Futures at NSE



Open Interest

As of March 31, 2010, the open interest of 427,873 currency futures contracts stood at worth ₹ 1,964 crore.

Traded Value Records

The following table shows the record highs in the currency derivatives segment, from the date of inception till March 31, 2010.

CDS Segment	Date	Number/Value
Record Number of Trades	January 11, 2010	78935
Record No. of Contracts Traded	March 30, 2010	4,353,053
Record Daily Turnover (value in ₹ crores)	March 30, 2010	₹ 19,927

Top 5 Currency Futures Contracts

During 2009-10, details of top 5 currency futures contracts in terms of turnover are presented in the table below.

Rank	Contract Name			Total Traded Quantity	Total Traded Value (₹ Crs)	Total Traded Value (US \$ mn)	Total Traded Value (%) to Currency Futures Total Traded Value
	Instrument Type	Contract Symbol	Expiry				
1	FUTCUR	USDINR	27-Jan-10	55,464,691	254,911	56,471	14.30
2	FUTCUR	USDINR	29-Mar-10	55,164,397	252,289	55,890	14.15
3	FUTCUR	USDINR	24-Feb-10	48,512,671	224,913	49,826	12.62
4	FUTCUR	USDINR	29-Dec-09	43,373,761	202,419	44,843	11.36
5	FUTCUR	USDINR	26-Nov-09	32,897,164	153,691	34,048	8.62

Note:- Total Traded Value Currency Futures ₹ in Crs 1782608.043

CLEARING AND SETTLEMENT

NSCCL undertakes clearing and settlement of all trades executed on the Currency Derivatives Segment (CDS) of the Exchange. It also acts as legal counterparty to all trades on this segment and guarantees their financial settlement. The Clearing and Settlement process comprises of three main activities, viz., Clearing, Settlement and Risk Management.

Clearing Entities

Clearing and settlement activities in the Currency Derivatives segment are undertaken by NSCCL with the help of the following entities:

Clearing and Settlement Mechanism of Currency Futures

Currency futures contracts are cash settled, i.e. through exchange of cash in Indian Rupees. The settlement amount for a clearing member is netted across all their TMs/clients, with respect to their obligations on MTM settlement. Currency futures contracts have two types of settlements, the MTM settlement which happens on a continuous basis at the end of each day, and the final settlement which happens on the last business day of the expiry month of futures contract.

Mark to Market settlement (MTM Settlement):

All futures contracts for each member are marked-to-market (MTM) to the daily settlement price of the relevant futures contract at the end of each day. The profits/losses are computed as the difference between:

1. The traded price and the day's settlement price for contracts executed during the day but not squared up.
2. The previous day's settlement price and the current day's settlement price for brought forward contracts.
3. The buy price and the sell price for contracts executed during the day and squared up.

The CMs who have a loss are required to pay the mark-to-market (MTM) loss amount in cash which is in turn is passed on to the CMs who have made a MTM profit. This is known as daily mark-to-market settlement. CMs are responsible to collect and settle the daily MTM profits/losses incurred by the TMs and their clients clearing and settling through them. Similarly, TMs are responsible to collect/pay losses/profits from/to their clients by the next day. The pay-in and pay-out of the mark-to-market settlement are effected on the day following the trade day. In case a futures contract is not traded on a day, or not traded during the last half hour, a 'theoretical settlement price' is computed. After completion of daily settlement computation, all the open positions are reset to the daily settlement price. Such positions become the open positions for the next day.

Final settlement for futures

On the last trading day of the futures contracts, at 12:00 pm, NSCCL marks all positions of a CM to the final settlement price as published by RBI and the resulting profit/loss is settled in cash. Final settlement loss/profit amount is debited/ credited to/from the relevant CM's clearing bank account on T+2 working day following last trading day of the contract (Contract expiry Day).

Settlement prices for futures

Daily settlement price on a trading day is the closing price of the respective futures contracts on such day. The closing price for a futures contract is currently calculated as the last half an hour weighted average price of the contract in the Currency Derivatives Segment of NSE. In case a futures contract is not traded on a day, or not traded during the last half hour, a 'theoretical settlement price' is computed. The final settlement price is the RBI reference rate on the last trading day of the futures contract. All open positions shall be marked to market on the final settlement price. Such marked to market profit / loss shall be paid to / received from clearing members.

Settlement Statistics

During 2009-10, cash settlement for currency futures amounted to ₹ 367.37 crore (US \$ 72.10 million). The details of settlement statistics for currency futures is presented in Table 7-2.

Margining System

NSCCL has developed a comprehensive risk containment mechanism for the Currency Derivatives segment. The most critical component of a risk containment mechanism is the online position monitoring and margining system. The actual margining is done on-line, on an intra-day basis using PRISM (Parallel Risk Management System) which is the real-time position monitoring and risk management system. The risk of each trading and clearing member is monitored on a real-time basis and alerts/disablement messages are generated if the member crosses the set limits. NSCCL

uses the SPAN®* (Standard Portfolio Analysis of Risk); a portfolio based margining system, for the purpose of calculating initial margins.

Margin Requirement

NSCCL intimates all members of the margin liability of each of their client. Additionally members are also required to report details of margins collected from clients to NSCCL, which holds in trust client margin monies to the extent reported by the member as having been collected from their respective clients. The margining system for Currency Derivatives segment is explained below:

- a) **Initial margin:** Margin in the Currency Derivatives segment is computed by NSCCL upto client level for open positions of CMs/TMs. These are required to be paid up-front on gross basis at individual client level for client positions and on net basis for proprietary positions. NSCCL collects initial margin for all the open positions of a CM based on the margins computed by NSCCL- SPAN®. A CM is required to ensure collection of adequate initial margin from his TMs up-front. The TM is required to collect adequate initial margins up-front from his clients. The parameters used in the computation of margins shall be revised five times a day based on the prices at Begin of Day, 11:00 am, 12:30 pm, 2:00 pm and at End of Day for currency futures.
- b) **Extreme loss margin** of calculated on the value of the gross open positions shall be adjusted from the liquid assets of the clearing member on an on line, real time basis.

Position Limit for Currency Futures

Client Level Position Limit

The client level position limit shall be applicable where the gross open position of the client across all contracts exceeds 6% of the total open interest or 10 million USD, whichever is higher.

Trading Member Level Position Limit

The trading member position limit shall be higher of 15% of the total open interest or 50 million USD. However, the position limit for a Trading Member, which is a bank, shall be higher of 15% of the total open interest or 100 million USD.

Clearing Member Position Limit

No separate position limit is prescribed at the level of clearing member. However, the clearing member should ensure that his own trading position and the position of each trading member clearing through him are within the limits specified above.

INTEREST RATE FUTURES

Contract Specification

The interest rate futures contract can be entered for a minimum lot size of 2000 bonds at the rate of ₹ 100 per bond (Face Value) leading to a contract value of ₹ 200,000. The expiries specified in the current contract cycle are two days prior to the last business days of March, June, September and December. (Contracts are referred to by their respective expiry months. For example, December 2010 contract means a contract expiring in December 2010.) Thus, at any given time, a maximum of four contracts can be allowed for trading on the exchange (Viz., March, June, September and December contracts). Currently, at NSE only two contracts are allowed to be traded.

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The table below summarizes the contract specifications.

Table: Contract Specification of Interest Rate Futures

Symbol	10YGS7	
Market Type	Normal (N)	
Instrument Type	FUTIRD	
Contract Size	INR 2 lakhs	
Underlying	10 Year Notional 7% Coupon bearing Government of India (GOI) security.	
Notional Coupon	7% with semi-annual Compounding	
Tick size	0.25 paise or INR 0.0025	
Trading hours	9:00 am to 5:00 pm (Monday to Friday on working days)	
Contract trading cycle	Four fixed quarterly contracts for entire year ending March, June, September and December. To start with NSE has introduced two quarterly contracts	
Last trading day	Two business days prior to the last working day of the contract expiry month.	
Quantity Freeze	1251 lots or greater	
Base price	Theoretical price of the 1st day of the contract.	
	On all other days, DSP of the contract.	
Daily Settlement Price	Volume Weighted average price of the contract during the time period specified by the Exchange. If not traded in specified timings then the theoretical price of the contract as determined by the exchange will be the daily settlement price	
Price operating range	+/- 5 % of the base price	
Position limits	Clients	Trading Members
	6% of total open interest or ₹ 300 crores whichever is higher	15% of the total open interest or ₹ 1000 crores whichever is higher
Initial margin	SPAN Based Margin	
Extreme loss margin	0.3% of the value of the gross open positions of the futures contract.	
Settlement	Daily settlement MTM: T + 1 in cash	
	Delivery settlement: T + 2 Last business day of the expiry month.	
Delivery Settlement		
Deliverable Grade Securities	Gol securities maturing at least 8 years but not more than 10.5 years from the first day of the delivery month with • Minimum total outstanding stock of ₹ 10,000 crore.	
Conversion Factor	The conversion factor would be equal to the price of the deliverable security (per rupee of principal) on the first calendar day of the delivery month, to yield 7% with semiannual compounding	
Invoice Price	Daily Settlement price times a conversion factor + Accrued Interest	
Delivery day	Last business day of the expiry month	
Intent to Deliver	Two business days prior to the delivery day.	

TURNOVER

The trading value in interest rate futures for the period August 31, 2009 till March 31, 2009 was ₹ 2,975 crore (US \$ 659.06 million) with total number of contracts of 160,894. The average traded volume during the same period was ₹ 21.25 crore (US \$ 4.71 million). The business growth of interest rate futures is shown in Table 7-1.

Open Interest

As of March 31, 2010, the open interest of 758 interest rate futures contracts stood at worth ₹ 14.15 crore (US \$ 3.13 million).

Traded Value Records

The following table shows the record highs in interest rate futures traded at NSE.

Interest Rate Futures	Date	Number/Value
Record number of trades	31-Aug-09	1,475
Record number of contracts	31-Aug-09	14,559
Record daily turnover (₹ crore)	31-Aug-09	267.31

Top 5 Interest Rate Future Contracts

During 2008-09, top 5 Interest Rate Future contracts in terms of turn over are presented in the table below.

Rank	Contract Name			Total Traded Quantity	Turnover		Total Traded Value (%) to Currency Futures Total Traded Value
	Instrument Type	Contract Symbol	Expiry		₹ cr	US \$ mn	
1	FUTIRD	10YGS7	18-Dec-09	118,797	2,203	488.03	74.06
2	FUTIRD	10YGS7	22-Mar-10	34,280	628	139.18	21.12
3	FUTIRD	10YGS7	21-Jun-10	7,817	143	31.76	4.82

Clearing and Settlement for Interest Rate Futures

For IRF, settlement is done at two levels: mark-to-market (MTM) settlement which is done on a daily basis and final settlement which happens on last business day of the expiry month. Final settlement involves physical delivery of the GOI securities from the list of deliverable grade securities .

Mark-to-Market (MTM) Settlement

MTM is the difference between the today's daily settlement price and previous day's daily settlement price. This process helps the clearing corporation in managing the counterparty risk of the future contracts by requiring the party incurring a loss due to adverse price movements to part with the loss amount on a daily basis.

To ensure a fair mark-to-market process, the clearing corporation computes and declares the settlement price for each day for determining daily gains and losses. This price is called the "daily settlement price" and represents the closing price of the futures contract for a given day.

The Daily Settlement Price is the closing price of the 10 year notional 7% coupon bearing GOI securities futures contract on the trading day. Daily Settlement price is the Volume Weighted Average Price (VWAP) of:

- Trades in the last 30 minutes subject to at least 5 trades for a minimum aggregate notional Face value of ₹ 10 crore, failing which
- Trades in the last 60 minutes subject to at least 5 trades for a minimum aggregate notional Face value of ₹ 10 crore, failing which
- Trades in the last 120 minutes subject to at least 5 trades for a minimum aggregate notional Face value of ₹ 10 crore.

In the absence of trading in the above stipulated time frame the theoretical price, to be determined by the Exchanges, would be considered as Daily Settlement Price. Theoretical pricing is

calculated on the basis of the cash and carry model using underlying prices of GOI securities from the delivery basket.

The MTM gains and losses are calculated everyday by computing the difference between the futures settlement price of that day and of the preceding day. These gains (or losses) of each client are credited into (or debited from) that particular client's account.

Physical Settlement

During the expiry month, the contract is settled by physical delivery of deliverable grade securities using the electronic book entry system of the existing Depositories (NSDL and CDSL) and Public Debt Office (PDO) of the RBI. The delivery of the deliverable grade securities takes place on the last business day of the delivery month. The short position holder in an expiring futures contract holds the right to decide which security to deliver from the deliverable basket as specified by the exchange. The underlying notional bond may not exist in reality and therefore, a basket of bonds is identified which qualify for delivery, any one of which adjusted with conversion factor can be used for delivery in lieu of the notional bond.

Margin Requirements

Broadly two types of margins are required from each investor entering into a futures contract; namely, Initial Margin and Extreme Loss Margin. When the investors enter into a futures contract, they have to deposit cash or liquid assets equal to the total of these two margins. The initial margin is arrived at by taking various scenarios of market price movements to protect the exchange against the default risk of the parties and is subject to a minimum of 1.6% at any point of time. Extreme loss margin on the other hand is equivalent to 0.3% of the contract amount.

Position Limits

As a risk management strategy to guard against heavy build-up of positions with one particular entity, the exchange imposes limits on the size of positions that can be taken by various entities in case of interest rate futures.

Client Level: The gross open positions of a client across all contracts should not exceed 6% of the total open interest or ₹ 300 crores, whichever is higher.

Trading Member Level: The gross open positions of the trading member across all contracts should not exceed 15% of the total open interest of the entire market or ₹ 1000 crores, whichever is higher.

Clearing Member Level: No separate position limit is prescribed at the level of the clearing member. However, the clearing member should ensure that his own trading position and the positions of each trading member clearing through him is within the limits specified above.

Foreign Institutional Investors (FIIs): The sum of gross long position in (a) the debt market and (b) the IRF market should not exceed their individual permissible limit for investment in government of India securities as prescribed from time to time. Further, short position in Interest Rate Futures contract should not exceed the sum stated above.

Risk Management

The Clearing Corporation of the Exchange i.e National Securities Clearing Corporation Ltd (NSCCL) becomes the central counter party for all trades executed on exchange and thereby reduces the credit risk faced by the participants. NSCCL also provides settlement guarantee which provides market stability and integrity by ensuring that a single party default does not lead to any systemic risk.

NSCCL manages timely settlements without defaults through 'risk management'. The various steps in risk management include implementing a risk estimation methodology, computation of margins, collection of margins, and corrective action in case of non-collection. The implementation of risk management is inter-alia through the margining framework.

Initial Margin

Initial margin shall be payable on all open positions of Clearing Members, upto client level, and shall be payable upfront by Clearing Members. The CM in turn collects the initial margin from the TMs and their respective clients. NSCCL has implemented the SPAN (Standard Portfolio Analysis of Risk) based methodology for margining which is being used world over by various Exchanges/Clearing Corporation. SPAN is a portfolio based margining system.

Initial Margin shall include SPAN margins and such other additional margins that may be specified by the Clearing Corporation from time to time. The parameters used in the computation of margins shall be revised six times a day based on the prices at Begin of Day, 11:00 am, 12:30 pm, 2:00 pm, 3:30 pm and at End of Day for IRF.

As an additional line of defense, 'Extreme loss margin' is charged as fixed percentage as specified by regulators. This is also computed and deducted on an on line, real time basis from the available collaterals.

On-line position monitoring system generates alerts whenever the margins of a member reaches 70%, 80%, 90% and 100% of the collaterals deposited at CM and TM level. NSCCL monitors the CMs limit for initial margin and extreme loss margin violations, while TMs are monitored for initial margin violation. Margin violations result in withdrawal of trading facility for all TMs of a CM in case of a violation by the CM.

The open positions of the members are marked to market based on contract settlement price for each contract at the end of the day. The difference is settled in cash on a T+1 basis.

As a Investor protection measures, a separate Settlement Guarantee Fund for this segment has been created and maintained for the currency derivatives segment.

Table 7-1 : Business Growth of Currency Futures

Month/ Year	No. of trading days	No. of Contracts Traded	Trading Value (₹ Cr)	Trading Value (US \$ mn)	Average Daily Trading Value (₹ Cr)	Average Daily Trading Value (US \$ mn)	No. of Contracts	Trading Value (₹ Cr.)	Trading Value (US \$ mn)
Sep-08*	22	1,258,099	5,763	1,131	262	51.42	90,871	428	84.00
Oct-08	20	2,275,261	11,142	2,187	557	109.32	170,202	851	167.03
Nov-08	18	3,233,679	15,969	3,134	887	174.09	146,262	737	144.65
Dec-08	21	4,681,593	22,840	4,483	1,088	213.54	177,520	867	170.17
Jan-09	20	4,900,904	23,980	4,707	1,199	235.33	254,797	1,247	244.75
Feb-09	19	6,416,059	31,761	6,234	1,672	328.16	315,317	1,612	316.39
Mar-09	19	9,907,173	50,817	9,974	2,675	525.02	257,554	1,313	257.70
Aug-08-March 09	139	32,672,768	162,272	31,849	1,167	229.05	257,554	1,313	257.70
Apr-09	16	7,851,502	39,386	8,725	2,462	545.41	206,620	1,039	230.17
May-09	20	13,682,468	66,431	14,717	3,322	735.93	318,203	1,504	333.19
Jun-09	22	15,724,507	75,363	16,695	3,426	758.97	267,400	1,285	284.67
Jul-09	23	19,888,011	96,523	21,383	4,197	929.77	318,298	1,531	339.17
Aug-09	20	18,672,623	90,396	20,026	4,520	1001.33	394,756	1,933	428.22
Sep-09	19	22,251,896	107,789	23,879	5,673	1256.76	360,603	1,739	385.25
Oct-09	20	32,267,958	150,843	33,417	7,542	1670.80	447,812	2,109	467.21
Nov-09	20	33,794,926	157,554	34,903	7,878	1745.24	493,018	2,297	508.86
Dec-09	21	41,004,341	191,415	42,405	9,115	2019.27	406,200	1,896	420.03
Jan-10	20	60,223,714	276,742	61,307	13,837	3065.35	615,612	2,852	631.81
Feb-10	19	52,112,185	246,875	54,691	12,993	2878.38	637,465	2,976	659.28
Mar-10	20	61,132,852	283,292	62,759	14,165	3138.02	427,873	1,964	435.09
2009-10	240	378,606,983	1,782,608	394,907	7,428	1645.55	427,873	1,964	435.09

* Includes turnover details for August 29, 2008- the first day of trading of Currency futures at NSE.

Table 7-2 : Settlement Statistics In Currency Futures Segment

Month/Year	Currency Futures			
	MTM Settlement		Final Settlement	
	₹ cr	US \$ mn	₹ Cr	US \$ mn
Aug-08	0.22	0.05		--
Sep-08	22.86	5.06	0.77	0.17
Oct-08	52.33	11.59	0.04	0.01
Nov-08	58.56	12.97	0.95	0.21
Dec-08	58.00	12.85	1.14	0.25
Jan-09	33.76	7.48	0.31	0.07
Feb-09	59.89	13.27	0.54	0.12
Mar-09	76.19	16.88	1.82	0.40
Aug '08-Mar '09	361.80	80.15	5.57	1.23

Table 7-3 : Business Growth of Interest Rate Futures

Month/Year	No. of trading days	No. of Contracts Traded	Trading Value (₹ Cr)	Trading Value (US \$ mn)	Average Daily Trading Value (₹ Cr)	Average Daily Trading Value (US \$ mn)	Open Interest at the end of		
							No. of Contracts	Trading Value (₹ Cr.)	Trading Value (US \$ mn)
Aug-09	1	14559	267.31	59.22	267.31	59.22	1,893	34.66	7.68
Sep-09	19	79,648	1,473.37	326.40	77.55	17.18	4,952	92.28	20.44
Oct-09	20	21,198	394.09	87.30	19.71	4.37	6,128	113.57	25.16
Nov-09	20	18,134	337	74.66	16.84	3.73	6,600	124	27.47
Dec-09	21	11,687	215.32	47.70	10.25	2.27	2,305	42.22	9.35
Jan-10	20	6443	118.82	26.32	5.94	1.32	2,576	47.77	10.58
Feb-10	19	3,124	57.415	12.72	3.02	0.67	3,547	64.92	14.38
Mar-10	20	6,101	111.38	24.67	5.57	1.23	758	14.15	3.13
Aug 2009-Mar2010	140	160,894	2,975.00	659.06	21.25	4.71	758	14.15	3.13

Note: Trading in Interest Rate Futures on Currency Derivatives Segment was introduced on August 31,2009

Table 7-4: Settlement Statistics in Interest Rate Futures Segment

(Amount in ₹ Cr.)

Month/Year	MTM Settlement		Final Settlement	
	₹ Cr	US \$ mn	₹ Cr	US \$ mn
Aug-09	0.07	0.02	Not Applicable	
Sep-09	3.86	0.86	Not Applicable	
Oct-09	5.24	1.16	Not Applicable	
Nov-09	7.15	1.58	Not Applicable	
Dec-09	5.19	1.15	72.42	16.04
Jan-10	2.98	0.66	-	--
Feb-10	1.36	0.30	-	--
Mar-10	1.98	0.44	37.24	8.25
2009-10*	27.82	6.16	109.66	24.29

The final settlement in Interest Rate Futures is physical settlement

* Figures are from August 31, 2009 commencement of IRF