



CIRCULAR

SEBI /DNPD/ 3 /2011

March 7, 2011

Recognized Stock Exchanges
and their Clearing Corporations / Clearing Houses

Dear Sir/Madam,

Sub: Futures on 91-day Government of India Treasury-Bill (T- Bill)

1. This is in continuation of SEBI Circular No. SEBI/DNPD/Cir- 46/2009 dated August 28, 2009 regarding Exchange Traded Interest Rate Futures.
2. It has now been decided to permit introduction of futures on 91-day Government of India Treasury-Bill (T- Bill) on currency derivatives segment of Stock Exchanges. Eligible Stock Exchanges may do so after obtaining prior approval from SEBI.
3. The details in terms of product design and risk management framework for futures on 91-day Government of India Treasury-Bill (T- Bill) are as given under [Annexure I](#).
4. This circular is issued in exercise of the powers conferred under Section 11 (1) of the Securities and Exchange Board of India Act 1992, read with Section 10 of the Securities Contracts (Regulation) Act, 1956 to protect the interests of investors in securities and to promote the development of, and to regulate the securities market.
5. The circular shall come into force from the date of the circular.
6. This circular is available on SEBI website at www.sebi.gov.in., under the category "Derivatives- Circulars".

Yours faithfully,

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Encl: as above



ANNEXURE-1

PRODUCT DESIGN AND RISK MANAGEMENT FRAMEWORK FOR 91-DAY GOVERNMENT OF INDIA (GoI) TREASURY BILL (T- bill) FUTURES

- 1.1 Underlying**
91 - day GoI T-bill.
- 1.2 Trading hours**
9 a.m. to 5 p.m.
- 1.3 Size of the contract**
₹ 2 lakh.
- 1.4 Quotation**
100 minus futures discount yield (i.e. for a yield of 5% the quote would be 100-5=95). The value of 1 basis point change in the futures discount yield would be ₹ 5.
- 1.5 Tenor of the contract**
The maximum maturity of the contract would be 12 months.
- 1.6 Contract months**
Three serial monthly contracts followed by three quarterly contracts of the cycle March/June/September/December.
- 1.7 Settlement mechanism**
The 91-day T-Bill future would be settled in cash in Indian Rupees.
- 1.8 Contract value**
 $\text{₹ } 2000 * (100 - 0.25 * y)$
where y is the futures discount yield.
For example, for a futures discount yield of 5%, the contract value would be –
 $2000 * (100 - 0.25*5) = \text{₹ } 197,500$
- 1.9 Daily Contract Settlement value**
 $\text{₹ } 2000 * (100 - 0.25 * y_w)$
(Here y_w is weighted average futures yield of last half an hour).
In the absence of last half an hour trading, theoretical futures yield would be considered for computation of Daily Contract Settlement Value.
- 1.10 Expiry/Last trading day/Final settlement day**
The expiry / last trading day / final settlement day for the contract would be the last Wednesday of the expiry month. If any expiry day is a trading holiday, then the expiry/ last trading day/ final settlement day would be the previous trading day.



1.11 Final Contract Settlement value

$$₹ 2000 * (100 - 0.25 * y_f)$$

(Here y_f is weighted average discount yield obtained from weekly auction of 91-day T-Bill on the day of expiry).

The methodology of computation and dissemination of the weighted average discount yield would be publicly disclosed by RBI.

1.12 Initial margin

The Initial Margin requirement shall be based on a worst case loss of a portfolio of an individual client across various scenarios of price changes. The various scenarios of price changes would be so computed so as to cover a 99% VaR over a one day horizon. In order to achieve this, the price scan range may initially be fixed at 3.5 standard deviation. The initial margin so computed would be subject to a minimum of 0.1 % of the notional value of the contract on the first day of trading in 91-day T-bill futures and 0.05 % of the notional value of the contract thereafter (the notional value of the contract shall be

₹ 200,000). The initial margin shall be deducted from the liquid net worth of the clearing member on an online, real time basis.

1.13 Extreme Loss margin

Extreme loss margin of 0.03 % of the notional value of the contract for all gross open positions shall be deducted from the liquid assets of the clearing member on an on line, real time basis.

1.14 Calendar spread margin

Interest rate futures position at one maturity hedged by an offsetting position at a different maturity would be treated as a calendar spread. The calendar spread margin shall be at a value of ₹ 100/- for spread of one month, ₹ 150 for spread of two month, ₹ 200/- for spread of three month and ₹ 250/- for spread of four month and beyond. The benefit for a calendar spread would continue till expiry of the near month contract. For a calendar spread position, the extreme loss margin shall be 0.01% of the notional value of the far month contract.

1.15 Formula for determining standard deviation

The exponential moving average method would be used to obtain the volatility estimate every day. The estimate at the end of time period t (σ_{ydt}) is estimated using the volatility estimate at the end of the previous time period. i.e. as at the end of $t-1$ time period (σ_{ydt-1}), and the return (r_{ydt}) observed in the futures market during the time period t . The formula would be as under:

$$(\sigma_{ydt})^2 = \lambda (\sigma_{ydt-1})^2 + (1 - \lambda) (r_{ydt})^2$$

where

λ is a parameter which determines how rapidly volatility estimates change.

The value of λ is fixed at 0.94.



- i. σ_{ydt} (sigma) means the standard deviation of daily logarithmic returns of discount yield of 91-day T-Bill futures at time t.
- ii. The "return" is defined as the logarithmic return: $r_{ydt} = \ln(Y_{dt}/Y_{dt-1})$ where Y_{dt} is the discount yield of 91-day T-Bill futures at time t. The plus/minus 3.5 sigma limits for a 99% VAR based on logarithmic returns on discount yield of 91-day T-Bill futures would have to be converted into price changes through the following formula :

$$\sigma_{pt} = D * \sigma_{ydt} * Y_{dt}$$

where

σ_{pt} means the standard deviation of percentage change in price at time t

D means Modified Duration

Y_{dt} = Discount Yield for 91-day T-Bill futures at time t

σ_{ydt} (sigma) means the standard deviation of daily logarithmic returns of discount yield at time t

The margin on long position would be equal to $100 * (D * 3.5 \sigma_{ydt} * Y_{dt})$ percentage of the notional value of the futures contract and the margin on short position would be equal to $100 (D * -3.5 \sigma_{ydt} * Y_{dt})$ percentage of the notional value of the futures contract. The Modified Duration for 91 day T-Bill Futures shall be -0.25.

- iii. The volatility estimation and margin fixation methodology should be clearly made known to all market participants so that they can compute the margin for any given closing level of the interest rate futures price. Further, the trading software itself should provide this information on a real time basis on the trading workstation screen.
- iv. During the first time-period on the first day of trading in 91-day T-bill futures, the sigma would be equal to 2.7 %.

1.16 Position limits

- i. **Client Level:** The gross open positions of the client across all contracts should not exceed 6% of the total open interest or ₹ 300 crores whichever is higher. The Exchange will disseminate alerts whenever the gross open position of the client exceeds 3% of the total open interest at the end of the previous day's trade.
- ii. **Trading Member Level:** The gross open positions of the trading member across all contracts should not exceed 15% of the total open interest or ₹ 1000 crores whichever is higher.
- iii. **Clearing Member Level:** No separate position limit is prescribed at the level of clearing member. However, the clearing member shall ensure that his own trading position and the positions of each trading member clearing through him is within the limits specified above.



- iv. **FII's:** In case of Foreign Institutional Investors, registered with Securities and Exchange Board of India, the total gross long (bought) position in cash and Interest Rate Futures markets taken together should not exceed their individual permissible limit for investment in government securities and the total gross short (sold) position, for the purpose of hedging only, should not exceed their long position in the government securities and in Interest Rate Futures, at any point in time.