

FAQ - 91 Day GOI Treasury Bill Futures

Introduction

The product was announced in RBI monetary policy 2010-11 on April 20, 2010. Subsequently, circulars were issued by SEBI and RBI providing product design and risk management framework.

National Stock Exchange of India Ltd (NSE) has received approval from SEBI to introduce Exchange traded Futures contracts on 91 day GOI T-bill. All the trades done at National Stock Exchange are cleared settled and risk managed by National Securities Clearing Corporation (NSCCL).

Q1) What is Treasury bill (T-Bill)?

- + T-Bill is a money market instrument to finance the short term requirements of the Government of India (GOI)
- + The returns on T-Bill instrument shall be difference between the par value and issue price / traded price
- + Different types of T-Bills are available in Indian market based on the maturity period. E.g. 91 day, 182 day and 364 day

Q2) How to trade in underlying T-Bill market?

- + T-Bills are issued at discount in primary auction conducted by Reserve Bank of India (RBI)
- + Negotiated Dealing System - Order Matching (NDS-OM) is a platform provided by RBI to trade T-Bills in secondary market
- + Example

| Bid Yield | Bid Price | Offer Price | Offer Yield |
|-----------|-----------|-------------|-------------|
| 7.00% | 98.2847 | 98.2968 | 6.95% |
| 7.05% | 98.2727 | 98.3088 | 6.90% |
| 7.10% | 98.2607 | 98.3209 | 6.85% |

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Q3) What is yield?

- ✚ Yield is the income (return) on an investment usually expressed as a percentage (annual return)
- ✚ Yield can be quoted as Yield to Maturity (YTM) or Discount Yield (DY)

$$\text{Yield to Maturity} = \frac{\text{Par Value} - \text{Market Price}}{\text{Market Price}} \times \frac{365}{\text{Actual Days}}$$

$$\text{Discount Yield} = \frac{\text{Par Value} - \text{Market Price}}{\text{Par Value}} \times \frac{360}{\text{Days (30 days in a month)}}$$

- ✚ Day count convention used for computing yield to maturity on T-Bills is Actual/365 whereas for discount yield it is 30/360
- ✚ In underlying market YTM concept is used to compute yield on T-Bill investment.

Q4) How to compute yield on investments in T-Bills?

- ✚ Assumed on 01-May-2011 market price of T-Bill maturing on 15-Jun-2011 is Rs 99.1015
- ✚ As per the formulas mentioned in Q3 above
 - Yield to Maturity = $((100 - 99.1015)/99.1015) * 365/46$
= 7.1940%
 - Discount yield = $((100 - 99.1015)/100) * 360/45$
= 7.1880 %

Q5) Who all are permitted to participate in 91 DTB futures?

- ✚ The existing members of the currency derivatives segment and futures & options segment are allowed to participate in 91 DTB futures.
- ✚ All categories of investors including FIIs are permitted to participate in 91 DTB futures
- ✚ The broad categories of investors in 91 DTB futures shall be Banks, Primary Dealers, Mutual Funds, Insurance companies, Broker members, FIIs and Corporates

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Q6) What are the advantages of trading in T-Bill futures?

- ✚ Cash settled futures contract, no physical delivery on expiry of the contract
- ✚ Lower margins as compared to other assets
- ✚ High on Safety as no Counterparty Risk
- ✚ No Securities Transaction Tax (STT)
- ✚ Existing trading infrastructures can be used
- ✚ Existing bank account of currency derivatives segment for settlement
- ✚ Easier and cheaper access to rates trading in India

Q7) What are trading hours and size of the contract

- ✚ Trading hours would be 09:00 am to 05:00 pm
- ✚ One contract shall denote face value of Rs 2 Lakhs

Q8) What are the contract tenures permitted for 91 DTB futures by SEBI?

- ✚ Three serial monthly contracts followed by three quarterly contracts of the cycle March/June/September/December are permitted by SEBI.

Q9) How to quote the contract?

- ✚ Quotation shall be Rs 100 minus futures discount yield.
- ✚ e.g. for a futures discount yield of 5% p.a. the quote would be $100 - 5 = \text{Rs } 95$
- ✚ The order matching would happen at quoted price.
- ✚ The quote price shall be in multiple of Rs 0.0025.

Q10) How to relate the underlying market quotation to quote futures contract based on futures discount yield?

- ✚ In NEAT plus and NOW, yield calculator is provided to ease the conversion between discount yield and yield to maturity
- ✚ Further a facility is provided in trading systems to quote the futures contract either in terms of YTM, valuation price or quote price.
- ✚ If the order is placed in terms of valuation price or YTM, system will compute the quote price rounded to nearest Rs 0.0025 and order will be placed accordingly

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Q11) How the contract value will be computed using quote price?

- + SEBI has specified formula for computing contract settlement value
- + Contract Value = Rs 2000 * (100 - 0.25 * y), where y is the futures discount yield
- + E.g. for a quote price of Rs 95 the futures discount yield shall be 5% p.a.
Therefore the contract value shall be : $2000 * (100 - 0.25 * 5) = \text{Rs } 197500$

Q12) How marked to market (MTM) value is calculated for the positions in T-Bill futures?

- + All the open positions are marked to market on T+1 day based on the daily settlement price
- + Daily settlement price (DSP) is computed as
 - o $DSP = 100 - 0.25 * Y_w$
 - o Where Y_w is weighted average futures yield of
 - last ½ hour subject to at-least five trade else,
 - last one hour subject to at-least five trades else,
 - last two hours subject to at-least five trades
 - o In the absence of above, theoretical futures yield shall be derived using T-Bill benchmark rates as published by FIMMDA
- + MTM settlement of 91 DTB futures shall be netted with other settlements of currency derivatives segment

Q13) What is the last trading day or expiry day of the contract month?

- + The contract shall expire on last Wednesday of the expiry month at 01.00 pm
- + If any expiry day is a trading holiday, then the expiry/last trading day would be previous working day

Q14) What is final settlement methodology on expiry of futures contract?

- + The contract would be settled in cash in Indian rupees on expiry plus one working day
- + Final settlement of the contract would be on weighted average price as published by RBI in 91 DTB auction result on expiry day

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Q15) What is the counterparty risk involved in 91 DTB futures transactions?

- ✚ NSCCL acts as a central counterparty providing financial settlement guarantee for trades of 91 DTB futures.
- ✚ NSCCL has a robust risk management system and collects adequate margins from participants to cover counterparty risks.

Q16) What are the various margins specified for 91 DTB futures positions by SEBI?

- ✚ Initial Margin - NSCCL shall adopt SPAN® (Standard Portfolio Analysis of Risk) system for the purpose of real time initial margin computation. 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.
- ✚ Initial margin 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.
- ✚ Extreme loss margin - Extreme loss margin shall be calculated at 0.03 % of the notional value of the contract for all gross open positions.

Q17) What is the calendar spread margin specified for 91 DTB futures by SEBI?

- ✚ Calendar spread margins shall be applicable only on spread positions
 - Rs 100/- for spread of one month
 - Rs 150 for spread of two month
 - Rs 200/- for spread of three month
 - Rs 250/- for spread of four month and beyond
- ✚ For a calendar spread position, the extreme loss margin shall be 0.01% of the notional value of the far month contract
- ✚ The benefit for a calendar spread would continue till expiry of the near month contract

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Q18) What are the position limits specified by SEBI for 91 DTB futures?

- ✚ Client level: The gross open positions of the client across all contracts should not exceed 6% of the total open interest or Rs 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 or Rs.1000 crores whichever is higher
- ✚ 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
- ✚ FII's: 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

Q19) What are the various forms of collaterals clearing members can provide towards their margin requirement?

- ✚ The collaterals can be provided in form of cash, fixed deposit receipts, bank guarantee, Government of India securities (G-Sec), Cash market securities and Mutual fund units
- ✚ Approved list of G-Sec, cash market securities and mutual funds units with applicable haircut is available on www.nseindia.com
- ✚ No separate collaterals is required, existing collaterals of currency derivatives segment can be used to trade this product

Q20) What is STT applicable for 91 DTB futures?

Currently, there are no STT applicable for 91 DTB futures

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