Introduction

BSE, Asia's oldest exchange and now world's fastest exchange with order response time of 6 microseconds, has commenced "**Clean Price**" based trading mechanism from August 08, 2016 on select group of Corporate bonds and Government bonds on Exchange's debt trading platform under capital market segment.. This is with a view to provide pricing transparency in trading in Corporate Bonds and Government Bonds. This move will align Exchange's debt trading with OTC markets and NDS-OM. The number of bonds, to be traded on clean-price based mechanism, will be increased phase-wise.

Debt markets:

The Debt Market is the market where fixed income securities of various types and features are issued and traded. The debt market in India consists of mainly two categories—

(i) the G-Sec markets or the government securities, comprising central government, state government securities and Treasury Bills (T-bills)

(ii) The corporate bond market consists of bonds issued by financial institutions (FI), public sector units (PSU), NBFCs and corporates.

Currently, trading happens on dirty price. As dirty price has accrued interest embedded in it, the investor is not able to see the actual price of the bond and has to calculate yield and clean price separately.

In Debt OTC market, bonds are traded on Clean Price and Yield. Clean price of a bond is the price of a bond expressed in 100 basis points and excludes accrued interest. Yield of a Bond (YTM) is that rate which equates the discounted value of the future cash flows to the present price of the bond.

Key Features of Clean Price/Yield Based Trading

- A trader can place order in a Bond based on clean price or yield. When a trader places an order in a bond security, the Exchange will compute yield (if the user enters clean price) or clean price (if the user enters yield).
- Orders will be matched on the clean price.
- The Exchange will also compute and provide other key information in its market data at every order and trade level, viz. Accrued Interest, Dirty Price and Total Consideration.
- Along with YTM, the Exchange will provide YTP and YTC for best buy and sell order which have a Call / Put Option. Also, Exchange will provide Current Yield information on last traded price.
- The Exchange will also provide upto 50 key details of a bond viz. issue date, maturity date, interest payment dates, record dates and ratings.
- This information shall be made available on trading screens as well on Bseindia website for participants.

Advantages of Clean Price/Yield Based Trading

- Trading on Yield/Clean price will align Exchange trading with the debt OTC market and NDS-OM (Gsec trading platform). Introduction of trading based on clean price/yield will bring uniformity in pricing.

- Transparency in pricing

- Bond database – All important features of bonds like issue date, maturity date, rating, record dates, put/call information, cash flow are readily available on trading screen. We have identified and are capturing 40 important fields, covering all features of each bond and disseminating same on trading screen under additional information field.

- No separate membership is required and provides access to all existing equity members

- No need for maintenance of separate collateral for trading

- No separate demat account and bank account to be maintained. The existing settlement details used for equity segment shall be used

- Nationwide reach connectivity through BOLT TWL and IML vendors

- Trading as per the international standards and norms

Specifications

Market Timings	09:15 am to 03:30 pm
Market Holidays	Holiday Calendar of Equity Segment
Price Quotation	The bonds shall be quoted in Clean Price (100 basis points) i.e. for trading purpose; Face value will be equivalent to 100. The price precision shall be upto 4 decimals.
Lot Size	Private Placement Bonds • Market Lot = Trade value of Rs.5 crores / Face Value of the Bond • Retail Lot – Trade value of Rs.10 Lacs / Face Value of the Bond. Public Issue Bonds • Market Lot = Trade value of Rs.5 crores / Face Value of the Bond. • Retail Lot – Lot size will be equal to 1 bond. Government Bonds • Retail lot – Lot size will be equal to 10 bonds. • Market lot= Trade value of Rs.5 crores / Face Value of the Bond
Available Securities	Exchange will publish the security list eligible for trading on clean price/yield basis on time to time basis.
Scrip Group	**The bonds on which trading shall be conducted on Clean Price shall be part of following two new groups:-** • 'FC' group - for Corporate Bonds • 'GC' group - for Government Bonds.
Order Matching	Order on these bonds (FC & GC Groups) shall continue be matched on the basis of the existing price-time priority with clean price quoted in 4 decimals.
Tick Size	Tick Size of all the FC group bonds on which clean price trading is to be allowed shall be 0.0001 Tick Size of all the GC group bonds on which clean price trading is to be allowed shall be 0.0025
Close Price	The close price of the bond shall be based on volume weighted average of trade prices of the trades executed during the last 30 minutes of continuous trading for that bond. In case no trade occurs during the last 30 minutes of the continuous trading session, the close price shall be the Last Trade Price for that bond. In case no trades occur in continuous trading session during the entire day, the close price shall be the Previous Close Price. **Note:-** *The Close price shall also be rounded upto 4 decimals in multiple of tick size.*
Settlement	Retail Bond Trading is on a Rolling Settlements basis with a T+2 Delivery Cycle same as followed in Equity Segment.
Holding of Bonds	The Bonds for retail trading through BSE can be held by investors in the same Demat account as is used for equity at the Depositories.
Price Bands	The price bands on bonds belonging to FC group shall be same as F group and the price bands of G group shall be same as that for GC group scrips shall be 10%.
Margins	Margin - 10% flat Margin plus end of the day mark-to market margin as applicable

Trading System

Order entry screen

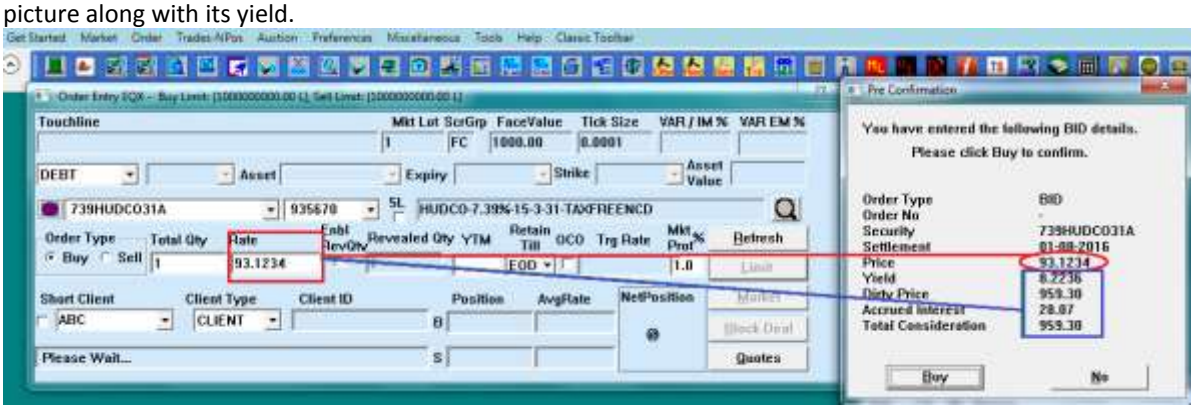
BOLT TWS provides the user to enter order using either of clean price or yield. Clean price is a price which excludes the accrued interest of the bond and is expressed in 100 basis points. And Yield (YTM) of a bond is that rate which equates the discounted value of the future cash flows to the present price of the bond

While placing order in clean price based bonds use can enter order using Clean Price or Yield.

➢ Placing orders using Clean Price

- User can place a Buy/Sell limit or Market order with the clean price from the existing Order entry screen.
- Select the scrip from market watch and invoke Order entry screen and enter Qty, Rate (Clean Price), client code and other details and click on 'Limit' / Market button to place an order.
- User can enter clean price with a precision of upto 4 decimals
- Once Limit or Market button is clicked, the system shall provide a preview of the order in the 'Pre confirmation screen'.
- The preview of the Pre confirmation screen shall provide following information :-
    - Scrip Details
    - Settlement Date for the respective Trading Date
    - Price – Clean Price as provided by the user
    - Yield – Yield computed by the Exchange based on the clean price.
    - Dirty price of the Scrip – Based on the Clean Price and Accrued Interest
    - Total Consideration – The actual obligation based on which settlement shall take place (Dirty Price X Quantity).

When the User clicks on 'Buy', the order gets added successfully in the Exchange and is displayed in the market picture along with its yield.



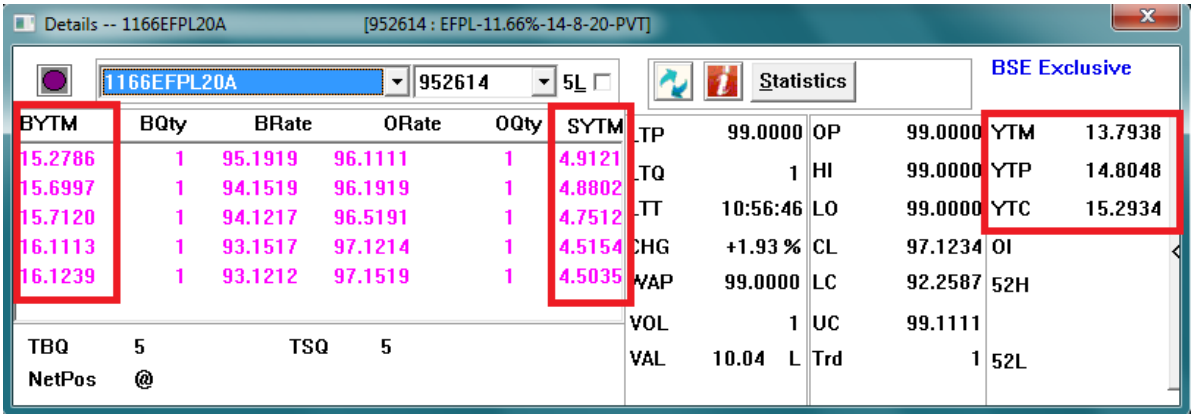
➢ Placing orders using Yield

- Similarly, user can place a Buy/Sell limit or Market order with the Yield from the existing Order entry screen.
- User can enter yield with a precision of upto 4 decimals
- Select the scrip from market watch and enter Qty, Yield, client code and other details and click on 'Limit' / 'Market' button to place an order.
- Once Limit or Market button is clicked, the system shall provide a preview of the order in the 'Pre confirmation screen'.

- The preview of the Pre confirmation screen shall provide following information :-
- Scrip Details
- Settlement Date for the respective Trading Date
- Yield – as entered by the user.
- Price- Clean price as computed by the Exchange based on the Yield.
- Dirty price of the Scrip – Based on the Clean Price and Accrued Interest
- Total Consideration – The actual obligation based on which settlement shall take place (Dirty Price X Qty).

➢ Market picture Screen

- In Advanced Market Picture screen shall include new fields i.e. yield details and details of clean price
- BYTM- Buy yield to maturity
- SYTM- Sell yield to maturity
- YTM - Yield to maturity
- YTP - Yield to put (applicable only if the bond is Callable / Putable)
- YTC - yield to call (applicable only if the bond is Callable / Putable)
- The yield information made part of market watch is attributed to the clean price being provided in a pending order or clean price being traded.
- Other details remains same as existing market picture.

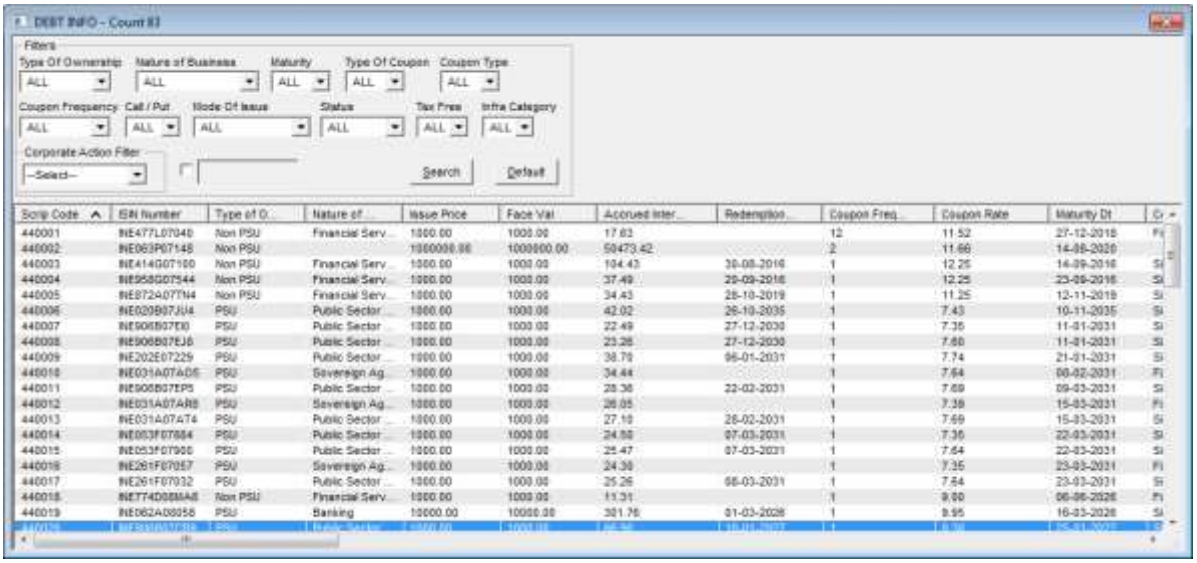


➢ Market Watch Screen

- User can set clean price based bonds on the market watch using the scrip profile window. User can filter scrips based on 'FC' and / or 'GC' group and select the scrips and set the same in market watch
- In existing Market Picture, introducing new fields i.e. yield details and details of clean price
- LYTM- Yield to maturity at last traded price
- LYTC- Yield to Call at last traded price
- LYTP- Yield to Put at last traded price
- BYTM- Buy yield to maturity (applicable only if the bond is Callable / Putable)
- BYTC - Buy yield to call (applicable only if the bond is Callable / Putable)
- BYTP – Buy yield to put (applicable only if the bond is Callable / Putable)
- SYTM- Sell yield to maturity (applicable only if the bond is Callable / Putable)
- SYTC- Sell yield to call (applicable only if the bond is Callable / Putable)
- SYTP- Sell yield to put (applicable only if the bond is Callable / Putable)
- Other details remains same as existing market watch screen
- In order to set up new fields on the market watch screen Click on Profile → Columns and add columns using the column profiling wizard.

➢ Additional Debt Info Screen

The additional debt info screen is created to provide additional details of the bond and its various other attributes that can assist the user in trading viz accrued interest , maturity , credit rating , coupon payment frequency etc.



FAQ

The Debt Market is the market where fixed income securities of various types and features are issued and traded. The debt market in India consists of mainly two categories—

(i) The G-Sec markets or the government securities, comprising central government and state government securities, and

(ii) The corporate bond market consists of bonds issued by financial institutions (FI), public sector units (PSU) and corporates.

To understand Debt market, here are few quick Q & A:

What are fixed income securities?

Fixed income securities are investment where the cash flows are according to a predetermined amount of interest, paid on a fixed schedule. Popularly known as Debt instrument.

What are the different types of instruments, which are normally traded in this market?

The instruments traded can be classified into Issuer of the securities & Instrument type

Issuer	Instrument
• Central Government • State Governments • Government Agencies/ Statutory Bodies • Public Sector Units • Corporate • Banks • Financial Institutions • NBFCs	• Zero Coupon Bonds • Coupon Bearing Bonds • Treasury Bills • Tax-free Bonds • Sovereign Bonds • Bonds • Debentures • Commercial Paper • Floating Rate Bonds, • Inter-Corporate Deposits • Certificates of Deposits & • Others

Who can participate?

Existing trading members of Equity segment of the exchange. All other can participants can trade as a client through trading member of the equity segment.

What are the key components of bonds?

There are many components of bonds. Major components are given below-

(a) Issue Price is the price at which the Bonds are issued to the investors. Issue price is mostly same as Face Value in case of coupon bearing bond. In case of non-coupon bearing bond (zero coupon bond), security is generally issued at discount.

(b) Face Value (FV) is also known as the par value or principal value. Coupon (interest) is calculated on the face value of bond. FV is the price of the bond, which is agreed by the issuer to pay to the investor, excluding the interest amount, on the maturity date. Sometime issuer can pay premium above the face value at the time of maturity.

(c) Coupon / Interest is the cash flow that are offered by a particular security at fixed intervals / predefined dates. The coupon expressed as a percentage of the face value of the security gives the coupon rate.

(d) Coupon Frequency means how regularly an issuer pays the coupon to holder. Bonds pay interest monthly, quarterly, semi-annually or annually.

(d) Maturity date is a date in the future on which the investor's principal will be repaid. From that date, the security ceases to exist.

(e) Call / Put option date is the Date on which issuer or investor can exercise their rights to redeem the security.

(f) Maturity / Redemption Value is the amount paid by issuer other than coupon payment is called redemption value.

(g) Yield on a security is the implied interest offered by a security over its life, given its current market price. It generally indicates return on the investment.

Why is there a difference between coupon rate and yield?

The difference between coupon rate and yield arises because the market price of a security might be different from the face value of the security. Since coupon payments are calculated on the face value, the coupon rate is different from the implied yield.

What is the relationship between price and Yield?

Prices and interest rates are inversely related.

What are fixed interest rate securities and floating interest rate securities?

Fixed interest rate securities are those in which the interest payable is fixed beforehand. Floating interest rate securities are those in which the interest payable is reset from pre-determined intervals according to a pre-determined benchmark.

What is record date/shut period?

G-Sec/Bonds/Debentures keep changing hands in the secondary market. Issuer pays interest to the holders registered in its register on a certain date. Such date is known as record date. Securites are not transferred in the books of issuer during the period in which such records are updated for payment of interest etc. Such period is called as shut period.

What do you mean by "Cum-Interest" and "Ex-Interest"?

Cum-interest means the price of security is inclusive of the interest accrued for the interim period between last interest payment date and purchase date.
Security with ex-interest means the accrued interest has to be paid separately

What is Day count convention?

The market uses quite a few conventions for calculation of the number of days that has elapsed between two dates. It is interesting to note that these conventions were designed prior to the emergence of sophisticated calculating devices and the main objective was to reduce the math in complicated formulae. The conventions are still in place even though calculating functions are readily available even in hand-held devices. The ultimate aim of any convention is to calculate (days in a month)/(days in a year). The conventions used are as below. We take the example of a bond with Face Value 100, coupon 12.50%, last coupon paid on 15th June, 2000 and traded for value 5th October, 2000.

(i) A/360(Actual by 360)

In this method, the actual number of days elapsed between the two dates is divided by 360, i.e. the year is assumed to have 360 days. Using this method, accrued interest is 3.8888.

(II) A/365 (Actual by 365)

In this method, the actual number of days elapsed between the two dates is divided by 365, i.e. the year is assumed to have 365 days. Using this method, accrued interest is 3.8356

(III) A/A (Actual by Actual)

In this method, the actual number of days elapsed between the two dates is divided by the actual days in the year. If the year is a leap year AND the 29th of February is included between the two dates, then 366 is used in the denominator, else 365 is used. Using this method, accrued interest is 3.8356

(iv) 30/360 (30 by 360 - American)

This is how this convention is used in the US. Break up the earlier date as D(1)/M(1)/Y(1) and the later date as D(2)/M(2)/Y(2). If D(1) is 31, change D(1) to 30. If D(2) is 31 AND D(1) is 30, change D(2) to 30. The days elapsed is calculated as Y(2)-Y(1)*360+M(2)-M(1)*30+D(2)-D(1)

(v) 30/360 (30 by 360 - European)

This is the variation of the above convention outside of the United States. Break up the earlier date as D(1)/M(1)/Y(1) and the later date as D(2)/M(2)/Y(2). If D(1) is 31, change D(1) to 30. If D(2) is 31, change D(2) to 30. The days elapsed is calculated as Y(2)-Y(1)*360+M(2)-M(1)*30+D(2)-D(1)

How is Dirty Price and Clean Price Calculated?

The clean price gives investors a measure of market value that is not affected by the payment of a coupon.

Accrued interest can be calculated directly from the bond's details, so in practice market participants quote bonds prices on a clean basis and leave it to their respective settlement departments to work out the accrued interest, and therefore the dirty price payable by the buyer (i.e. the bond's present value).

Let's see how Accrued interest and clean price calculation works with an example

- Face Value is 1,000
- Coupon rate is 7.64%
- Interest periodicity : Annual
- Last interest paid date was 23rd March, 2016
- Next interest paid date is 23rd March, 2017
- Expected settlement date is 3rd August, 2016
- Current Price of Bond (Dirty Price) – Rs. 1,112.00

Actual number of days since last interest paid (23 March 2016 – 3 August 2016): 133

Accrued interest = (133/365) X (7.64/100) X 1000 = 27.8389

Subtracting the accrued interest from the bond's present value gives
Clean price = (1,112.00 – 27.8389) * (100/Face value of bond) = 108.4161

Given the above understanding, below is an illustration of Existing and New scenario

Security Details			
Security ID	764NABARD31	Issuer Name	NABARD
Group	F	Coupon Rate	7.64%
Face Value	1,000	Maturity Date	23 March 2031
Particulars	**Existing**	**Proposed**	
Trade Price	(Dirty Price) 1,112.00	(Clean Price) 108.4161	
Quantity	5	5	
Plus Accrued Interest	Added in Price	139.1945	
Settlement Value	5,560	5,560	

What is Current yield?

This is the yield or return derived by the investor on purchase of the instrument (yield related to purchase price). It is calculated by dividing the coupon rate by the purchase price of the debenture. For e. g: If an investor buys a 10% Rs 100 debenture of ABC company at Rs 90, his current Yield on the instrument would be computed as:

Current Yield = (10%*100)/90 X 100 , That is 11.11% p.a

What is Yield to Maturity (YTM)?

Yield of a Bond (YTM) is that rate which equates the discounted value of the future cash flows to the present price of the bond.

$$\text{Bond Price} = \frac{\text{Cashflow 1}}{(1+\text{yield})^1} + \frac{\text{Cashflow 2}}{(1+\text{yield})^2} + \ldots + \frac{\text{Last Cashflow}}{(1+\text{yield})^n}$$

Where,
Bond Price = Clean price
Cash flow = Interest Payment or Coupon

Yield to Call (YTC)

Yield to call is a measure of the yield of a bond if you were to hold it until the call date. The yield is calculated from the cash flows from the coupon payments plus the cash flow of the redemption proceeds at the time of the call.

Yield to Put (YTP)

Yield to put is a measure of the yield of a bond if you were to hold it until the put date. The yield is calculated from the cash flows from the coupon payments plus the cash flow of the redemption proceeds at the time of the put.

How is Total Consideration Calculated?

- Using Dirty Price
  Total consideration = Dirty price* Quantity

- Using Clean Price
  Total Consideration = {(Clean Price* Face Value/100) + Accrued Interest} *(Quantity)

For more details & working on Trading in Government & Corporate bonds on clean price mechanism, please refer to our Notice No. : 20160725-14 Dated 25th July, 2016

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