THE CLEARING CORPORATION OF INDIA LTD

Risk Management Department

This has been Superseded by Notification No. RMD/SS/ 10/02 dated 14-Jan-2010 on Changes in Valuation Methodology

No. RMD/SS/ 09/13 **28th August, 2009**

FOR INFORMATION OF ALL MEMBERS

Securities Segment :
Changes in Valuation Methodology, Computation of Margin Factors & Hair-cut Rates

In terms of the provisions of Chapter VII of Securities segment regulations, Clearing Corporation is authorised to improve upon its risk containment measures.

2. Based on the observation of the market behaviour in the past few years and the feedback received by the Clearing corporation in its meetings with members/ user groups etc., it has been decided to bring about following changes in Clearing Corporation's internal valuation model and in computation of margin factors etc. so that the impact of illiquidity of certain securities on the prices and price volatilities are reflected in a better manner

3. The changes being brought about will be as under:

(a) yield curve used for valuation will henceforth be Nelson Siegel Svenssons (NSS) equation based yield curve (as against Nelson Siegel equation being used so far). These NSS equation based valuations will be used for computation of Margin factors and Hair Cut rates as well.

(b) yield spreads or spreads in terms of Rupees & Paise will be used to factor in impact of illiquidity etc. for the purpose of valuations.

(c) illiquidity based multiplicants will be used for arriving at margin factors for illiquid securities. Multiplicants may also be used in respect of securities where higher volatility is expected (e.g. securities in when issued market).

(d) YTM based yield spreads polled by FIMMDA will be used in valuation of Floating Rate Bonds (FRBs). In the event of spread not being available on any day, Clearing Corporation may use spreads as it considers reasonable.

The detailed processes have been listed in the Annexure.

4. The Spreads used for valuation and the multiplicants used for arriving at Margin Factors will be subjected to periodic review. Spreads will be reviewed at least once in a month while the multiplicants for margin factors will be reviewed once in a quarter and any change will be notified to the members at least one day in advance.

5. These Changes will come into effect from 01st September'09.

6. In case of Margin Factors and Hair Cut Rates, changes will come into effect on or after 1st September '09.

Encls.

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Annexure to Notification no. RMD/SS/09/13
dated 28th August, 2009

The Clearing Corporation of India Ltd.
Risk Management Dept
Securities Segment :
Changes in Valuation Methodology, Computation of Margin Factors & Hair-cut Rates

S.No.	Process	Change in Process
1.	Yield curve for valuation and computation of margin factors	NSS yield curve will be used in place of NS Yield Curve.
2.	Valuation of Govt.of India Securities	**a) For Securities maturing within a year and T-Bills -** No yield spread (spread over zero coupon yields) will be applied. **b) For Securities having at least 5 trades during previous month.** i) Security-wise illiquidity discounts in rupee terms (LAF), based on average of daily difference between the model price and the weighted average price of the security during the previous month, will be arrived at the end of a month. ii) LAF arrived at in (i) above will be notified to the members before being brought into effect. iii) In case of any sudden change in the market leading to a significant change in the spreads, LAF may be changed after duly notifying the members about such change. **c)For Securities having less than 5 trades during the previous month -** Tenor wise yield spreads (spread over zero coupon yields) for tenors 1-3 years, 3-5 years, 5-10 years, 10-20 years and above 20 years, will be arrived at by grouping the securities in different buckets based on residual maturity.

		i) Tenor wise yield spreads will be arrived at based on trade data (excluding outliers) of securities belonging to the tenor buckets during a month. Such spreads will be used in the subsequent month. Trades on the date of auction of a security and for 7 days thereafter will not be considered for arriving at yield spread. The yield spreads so arrived at will be reviewed every month. For tenor buckets where there are no trades for arriving at yield spread, the spread used for such tenor during the previous month or spreads arrived at by interpolation or extrapolation, as appropriate will be used. ii) Yield spread arrived at in (i) above will be notified to the members before being brought into effect iii) Back-testing of effectiveness of using yield spread will be run and summary of results will be made available to the members on periodic basis. iv) In case of any sudden change in the market leading to a significant change in the spreads, yield spreads may be changed after duly notifying the members about such change.
3.	Valuation of SDLs	Yield spread (spread over zero coupon yields) would be used for adjustment towards illiquidity. The process will be as under: a) Uniform yield spread (spread over zero coupon yields) across tenors and states will be used to capture the impact of illiquidity etc. b) Yield spread will be arrived at based on trade data (excluding outliers) of SDLs during a month and will be used in the subsequent month. Trades in certain securities prices of which are not likely to be affected significantly due to illiquidity e.g. trades on the date of auction of a security and for 7 days thereafter, will not be considered for arriving at yield spread. The yield spread so arrived at will be reviewed every month.

		c) Yield spread arrived at in (b) above will be notified to the members before being brought into effect. d) Back-testing of effectiveness of using yield spread will be run and summary of results will be made available to the members on a periodic basis. e) In case of any sudden change in the market condition leading to a significant change in the spreads, yield spreads may be changed after duly notifying the members about such change.
4.	Valuation of Govt of India Special Securities (like Oil bonds, FCI bonds etc.)	Yield spread (spread over zero coupon yields) will be used for adjustment towards illiquidity. The process will be as under: a) Yield spread will be arrived at based on trade data (excluding outliers) in respect of Special Securities during a month and will be used in the subsequent month. The yield spread so arrived at will be reviewed every month. b) Yield spread arrived at in (a) above will be notified to the members before being brought into effect. c) Back-testing of effectiveness of using yield spread will be run and summary of results will be made available to the members on a periodic basis. d) In case of any sudden change in the market leading to a significant change in the spreads, yield spreads may be changed after duly notifying the members about such change.
5	Valuation of Floating Rate Bonds issued by Government of India.	YTM based yield spreads polled by FIMMDA for valuation of FRBs will be used for valuation. In the event of spread not being available on any day , Clearing Corporation may use spreads as it considers reasonable.
6	Margin Factor Computation	Margin factors for all securities excluding Special Securities issued by Govt. of India will be computed at 3 day VaR using NSS Yield Curve (0.25% is added towards coupon accrual). Additionally, an intra-day volatility component

		at 50% of the respective margin factor is presently added. a) **Margin factors will be stepped up for Government of India Securities and SDLs as under**: i) For Liquid-Securities having average of more than ten trades (face value>= Rs.5 Cr) per day during previous calendar quarter – at 3 day VaR ii) For Semi-liquid securities having average of 1-10 trades(of face value >=Rs.5 crores) per day during previous calendar quarter - 1.5 times of 3 day VaR iii) For illiquid securities having average of less than 1 trade (of face value>=Rs.5 crores) per day during previous calendar quarter - 2 times of 3 day VaR. **b) Margin factors for Special Securities issued by Government of India will be stepped up as under:** i) Securities having up to average 10 trades per day during previous calendar quarter – 1.5 times of 3 day VaR ii) Securities having less than average 10 trades per day during previous calendar quarter – 2 times of the respective 3 day VaR. In all cases in (a) and (b) above, 0.25% will continue to get added towards accrued coupon.
8	Hair-cut rate Computation	Hair cut rates of securities will be computed by using NSS yield curve. a) For Securities Segment, the hair cut rate will be at 3 day VaR (rounded upto next higher integer). b) For CBLO segment, the haircut rate will be at 5 day VaR (rounded up to next higher integer). **Hair-cut rates of securities will be stepped up using illiquidity multiplicants as under**:

		i) For Liquid-Securities having average of more than ten trades (face value>= Rs.5 Cr) per day – no change i.e., equal to VaR number (3 day for Securities and 5 day for CBLO). ii) For Semi-liquid securities having average of 1-10 trades(of face value >=Rs.5 crores) per day during previous calendar quarter - 1.5 times the respective VaR number (3 day for Securities and 5 day for CBLO) iii) For illiquid securities having average of less than 1 trade (of face value>=Rs.5 crores) per day - 2 times the respective VaR number (3 day for Securities and 5 day for CBLO).