Risk Management Department

This has been Superseded by Notification No. RMD DRV-21-40 dated 30-Dec-2021 on Margining and Risk Processes for Rupee IRS Segment

No. RMD/DRVT/18/120 **01-Dec-2018**

FOR INFORMATION OF ALL MEMBERS

Rupee Derivatives Segment

Risk Management processes and Margining Methodology

We invite your attention to our Notification No. RMD/DRV/18/50 dated 23rd Apr'18.

In terms of Chapter VI – "Margins" of the Regulations of the Rupee Derivatives Segment, the Clearing Corporation prescribe requirements of margins for the rupee derivatives segment. In terms of Clause B4 of chapter 6, CCIL proposes to introduce a Concentration margin in this segment. Also, in terms of clause E1 of Chapter VIII, CCIL proposes to haircut the MTM gains before making them available as Margin credit to the member. In light of these enhancements, the margin computation process for this segment has been consolidated and is presented below. The changes being implemented are underlined:

A. Composition of Settlement Guarantee Fund

[Reference Chapter III of the Regulations]

There will be no separate Settlement Guarantee Fund for the Rupee Derivatives Segment. Instead, as stated in Chapter III (A)(2) of the Regulations, a Member of this segment shall authorize Clearing Corporation to consider the unutilized portion of the SGF tendered by such Member for Securities Segment, towards SGF for the Rupee Derivatives Segment. The portion of unutilized SGF so identified shall be subject to such provisions of Securities Segment Regulations as notified by Clearing Corporation from time to time.

B. Initial Margin

1. The initial margin on the outstanding trade portfolios of the members is based on portfolio Value at Risk (VaR). The detailed process for Initial Margin computation is as under:

i) Outstanding trade portfolio of the members is split into benchmark-wise groups.

ii) Historical returns series of the Zero curves implied from the Swap curves of the past 1000 days is worked out for standard tenor points. VaR is computed by simulating 1000 swap scenarios as under:

a. **750 consecutive volatility scaled (EWMA) returns from the most recent period. These returns will be the rolling period return, where scaling will be as under:**

Exponentially Weighted Moving Average (EWMA) volatilities are calculated for each such tenor point for each day in this historical period. Historical return series of these 750 days is modulated by multiplying each return by the ratio of current EWMA volatility and the historical EWMA volatility.

And

b. 250 consecutive un-scaled returns from the period with high market volatility termed as “stress period”. These returns are identified from the past 10 year historical period and are reviewed on a monthly basis.

c. Value of the portfolio of outstanding trades is then simulated using the modulated returns and unscaled return series as mentioned above. The forward rates used for estimating the future cash flows and the discount factors used to discount these projected cash flows are both arrived at by using the same zero rates as mentioned above.

d. Value at Risk is arrived at 99% Confidence level using a holding period of 3 days.

2. **Spread margin** Spread Margin is added to Portfolio VaR to arrive at Applicable Initial Margin for the trades of a member. It is computed as under:

a) All trades having same residual maturity and on same benchmark are netted together. All such net trades as above are classified into groups having residual tenors falling into 6-monthly buckets (e.g. 0-6m, >=6m-1yr.................>=9.5yrs – 10yrs)

(b) VaR is computed individually for all such net trades, sum of which is say X. Portfolio VaR is also computed for the entire portfolio (say Y) as well as for above mentioned Group portfolios (sum of which is say Z).

Spread Margin will then be computed as 20% (X-Z) + 10 %(Z-Y).

3. **Minimum Initial margin**: The minimum margin rates for swaps are as under:

Residual Tenor (Of net notional value)	Minimum Margin Rate
0 to 3	0.50%
>3 to 5 years	1.00%
>5 Years	1.75%

Set offs are allowed for trades in the same benchmark but falling in different residual maturity buckets (For example, if in 0 to 3 years net buy is of Rs.10,000 Crores and in 3 to 5 years net sale is of Rs.2,000 Crores, the minimum margin is calculated as Rs.30 Crores i.e. Rs.50 Crores – Rs. 20 Crores).

If applicable initial margin is lower than the minimum margin computed as above, such minimum margin is collected as initial margin.

4. **Step up in Initial Margin for weaker entities**: In terms of para A(4) of Chapter VIII of the Regulations of the Derivatives Segment, CCIL may collect higher Initial Margin from members having lower credit ratings.

C. MTM valuation and MTM Margin computation

1. End of the day Swap Rates for standard tenors from the below mentioned sources are considered for arriving at the daily Mark to Market values of outstanding IRS/FRA trades.

   - <u>End of the day MIBOR-OIS rates published by Financial Benchmark India Pvt. Ltd. (FBIL) for standard tenors 1M, 2M, 3M, 6M, 9M, 1Y, 2Y, 3Y, 4Y and 5Y.</u>
   - <u>For standard tenors 7Y and 10Y, swap rates will be the simple average of all quotes available during the day on Reuters page “INROIS”.</u>

   If for some reason such rate is not available, CCIL will be using rates from other sources as considered appropriate by it. Use of any such rate(/s) will however be communicated by CCIL to its members of this segment with the reason for such deviation.

2. Swap Rates for other tenors are arrived at through linear interpolation / extrapolation of the rates available for the standard tenor points immediately preceding and succeeding such tenor.

3. The implied zero curve is then arrived from the swap curve using bootstrapping.

4. All trades of a member on a benchmark are re-valued using implied swap zero Curve for the benchmark and the net value is taken as MTM value of the portfolio of outstanding trades of the member.

5. For such valuation, value of floating leg cash flows is estimated using the zero curves as in 3 above. For future dated cash flows, zero rates from zero curve as above are used.

6. Half of the bid-offer spread is reduced from the floating side cash-flows for a buyer and added to the floating side cash-flow for a seller. At present, the bid offer spread is treated as NIL.

7. In terms of Clause C (2.4), of Chapter VIII of the Regulations, if the aggregate of MTM margin for a member for all such settlement date-wise positions shows MTM loss, such amount is collected as MTM margin from a member.

8. In terms of Clause E (1) of Chapter VIII of the Regulations, if the aggregate of MTM value for a member shows MTM gain, then the member's margin account will be credited with the MTM gain amount <u>reduced by a prescribed haircut</u> and the same will be allowed to be treated as Margin Made Available by the member. <u>The hair-cut on MTM gains will be 5% and the same may be revised in the future after due notification.</u> Such margin made available can be used against margin requirements in the Derivatives segment as well as in any other segment which draws margins from Securities Segment SGF.

9. In terms of Clause E (2) of Chapter VIII, such margin credit mentioned in paragraph 8 above will be withdrawn on the day of settlement of the particular position having MTM gain. In terms of Clause E (3) of Chapter VIII, if there is a margin shortfall as a result of such withdrawal of margin credit on account of settlement, CCIL will hold back settlement proceeds to the extent of such shortfall in margin. In terms of Clause E (4), such, withheld settlement proceeds will be released on replenishment of the margin shortfall.

10. In terms of clause E (4), if the member fails to replenish the shortfall by the end of the day of such withholding, such withheld settlement proceeds is credited by CCIL to the SGF account of the member in the Securities Settlement Segment without any further notice to the member.

D. Crystallized Settlement Obligations

1. Discounted value of any amount determined as payable or receivable by the Member due to early termination is termed as Crystallized Settlement Obligation. This is classified into two groups viz. Crystallized Settlement Obligation for the day and for other days.

2. Crystallized Settlement Obligation payable by a member is treated as a margin liability of the member. The Crystallized Settlement Obligation receivable by a member, on the other hand, is treated like a margin credit available to the member

3. The amount of Crystallized Settlement Obligation Receivable for the day is treated as nil when the settlement file is sent for settlement. If such reduction in Crystallised Settlement Obligation Receivable could cause margin shortfall, the corresponding amount is held back from settlement amount till replenishment of margin shortfall. If the replenishment of shortfall does not happen till the end of the day, the amount is credited back to Securities Segment SGF account.

4. The amount of Crystallized Settlement Obligation Payable for the day for a member is treated as nil when the settlement is over in the account of the member. In the event of settlement shortage however, such amount will be transferred to Margin Held Back for Default account

5. Moreover, if the settlement for the day is not over till the processing for End of the day MTM margin calculation for the day, settlement obligation Payable for the day together with possible interest costs on such amount in case of default will be transferred from MTM margin collected from such Member to its Crystallized Settlement Obligation Account.

E. Concentration Margin

Concentration margin will be levied on participants whose aggregate Initial Margin obligation across all benchmarks exceeds a pre-determined threshold value.

- The threshold level will be set equal to 10% of the average daily total initial margin requirement of all members in the segment in the preceding month and shall be advised to members at the beginning of the following month.

- Concentration margin will be collected at 15% of initial margin as soon as a member’s Initial margin obligation exceeds the above threshold level and shall continue to be in force till the initial margin requirement for the member falls below the second threshold level of 8% of the average daily total initial margin requirement of all members in the segment in the preceding month.

- The above-mentioned threshold rates and the rate at which the Concentration Margin is collected shall be reviewed by CCIL on a semi-annual basis or more frequently if required and the same will be advised to members
- Concentration margin shall be blocked from Securities segment Settlement Guarantee Fund (SGF) after advising the concerned members. Imposition of Concentration Margin may result in margin shortfall if available SGF balance is inadequate to cover the increased margin requirements. Failure to replenish such shortfall within one hour from the time of imposition shall invite levy of penal charges as applicable.

F. Replenishment Level and Rejection Level

[Reference Chapter VI(A) para (2) and (3) of the Regulations].

Clearing Corporation shall make a margin call to the member when the margin utilisation exceeds 90% of the margin made available for this segment. (i.e. if the available SGF is lower than the amount of Total Margin x 100 / 90). Moreover, Clearing Corporation will stop acceptance of further trades if such trades will cause the margin utilisation to exceed 95% of the margin made available for this segment.

G. Frequency of exposure check

[Reference Chapter IV(G)(1) of the Regulations]

Eligible Interest Rate Swap trades are subjected to check for adequacy of margins for both the counterparties to the trade on a trade by trade basis. The 'Exposure Check' process is carried out on an online basis till the cut-off time (6:00 pm at present). Trades reported after the cut-off time will be taken up for exposure check on the next working day. Any trade remaining un-accepted during the online exposure check will be taken up for re-evaluation at the time of cut-off.

H. Incremental MTM Margin

[Reference Chapter VI (B)(2) of the Regulations]

The amount of Incremental MTM margin will become payable at 9-00 A.M. of the next business day (including Saturdays). Thus while the margin will be debited / reduction in MTM gain will be effected immediately on assessment of the same at the end of the day, in case of a resultant shortfall in margin, members are required to fund their margin account by 9-00 AM on the next business day. Failure to replenish the margin shortfall by 9-00 AM on the next business day will attract penalty in terms of para C(3) of Chapter VI of the Regulations of the Rupee Derivatives and Rupee Derivatives (Guaranteed Settlement) Segment .

I. Volatility Margin and Intra-day MTM Margin

[Reference Chapter VI(B)(3) of the Regulations]

1. In case of sudden increase in volatility in exchange and/or interest rates, Volatility Margin will be imposed by Clearing Corporation at a rate notified by Clearing Corporation at the time of its imposition.

2. Volatility Margin, if applicable, will be imposed immediately after notifying to the members. Imposition of Volatility Margin may result in margin shortfall in the accounts of the members if available SGF balance is inadequate to cover the increased margin requirements. It would be the responsibility of the member to replenish the shortfall at the earliest. Penal charges will be levied if shortfall is not replenished within one hour from the time of imposition

3. Irrespective of whether Volatility Margin is imposed or not, on any day of high volatility, if loss in portfolio value of a member is higher than 50% of total of Initial Margin, Volatility Margin and Concentration margin collected, such loss may also be collected by Clearing Corporation as MTM margin on intraday basis. Members will be notified one hour before such imposition of additional MTM margin.

4. If the additional MTM margin collected as above results in a margin shortfall, margin call will be made and the member will be required to deposit margin immediately. In case of such margin shortfall, penal charges will be levied as applicable.

This notification comes into effect from **07/Jan/2019** and supersedes our Notification No. RMD/DRV/18/50 dated 23rd Apr'2018, RMD/DRV/14/06 dated 12th Mar'2014, RMD/DRV/14/44 dated 20th Dec'2014 and RMD/FX-FF/13/82 dated 2nd Dec'2016 in this regard.

Yours faithfully,

For The Clearing Corporation of India Ltd.,

Sd/-
Managing Director

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