THE CLEARING CORPORATION OF INDIA LTD

Risk Management Department

No. RMD/SS/25/22 **30th May'25**
FOR INFORMATION OF ALL MEMBERS

Securities Segment: Tri-party Repo

Risk Management process for Tri-party Repo (TPR) trades

In terms of the provisions of chapter VI 'Limits and Margins' of the regulations of the Securities Segment, the Clearing Corporation prescribe requirements of margins for the segment. In this regard, we invite your attention to our Notification No. **RMD/SS/23/62** dated 08th Dec'23 which details the risk management process and margining methodology for triparty repo trades. Members are advised to take note that the aforesaid Notification stands revised as below with the enhancements / modifications underlined. <u>The changes pertain to an enhancement to the approach followed for charging Initial Margin (IM) on outstanding triparty repo trades.</u>

A. **Initial Margin**:

Initial Margin rate shall be uniform for Triparty repo trades of all maturities. In terms of the provisions of Chapter VIII of the Securities Segment Regulations, for each first leg settlement cycle (i.e. T+0 or T+1), <u>Initial Margin shall be charged trade-wise at 0.50% of the net second-leg considerations of the Triparty repo trades.</u> ~~Initial Margin shall be charged at 0.50% of the net outstanding settlement date-wise second leg considerations of the Triparty repo trades~~. While arriving at the net outstanding second leg consideration for a settlement date, offset shall be allowed on First in First Out (FIFO) basis between borrow and lend trades with the same second leg settlement date. If there is any interest loss due to such offset, such interest loss is recovered as Initial Margin. <u>Apart from such interest loss, in case of partially offsetting transactions, Initial Margin shall be charged only if the member has a net lend position with respect to a second leg settlement date while a net borrow position for such date shall be exempt from Initial Margin. An illustration of application of Initial margin is placed in Annexure B.</u>

B. **Borrowing Limit**

1. Borrowing limit (BL) shall be fixed for each member / its constituent based on their collateral deposits in the form of eligible government securities and treasury bills. The

list of securities eligible as collateral shall be reviewed every month. The haircuts applicable on the eligible securities shall be revised every month and the revised haircuts shall be notified. BL shall be computed at the end of each business day. To arrive at BL, securities deposited shall be valued at CCIL's Mark to Market (MTM) prices[1]. MTM value of the individual securities shall then be reduced by the applicable haircuts and the respective Accrued Interest shall be added to these haircut adjusted values. The aggregate value of all securities rounded downwards to the nearest rupee shall be set as permissible borrowing limit for such member / its constituent. (*Actual Borrowing Limit that can be availed is subject to collateral concentration limits as specified in our Notification No RMD/SS/21/21 dated 16th Apr'21*).

2. Haircut rate shall be based on a historical simulation based Value at Risk model with a 99% confidence level. The Value at Risk (VaR) numbers shall be further subjected to a minimum value for securities falling in a particular tenor bucket. _The detailed process of Hair cut computation is described in Annexure A(III).

3. The haircut rate shall be at 5 day VaR adjusted as above and then stepped up using illiquidity multiplicands as indicated below (and rounded up to the next higher integer):

    a. For Liquid Securities having average of more than ten trades (face value>= Rs.5 crores) per day during previous calendar month – no adjustment to the VaR as per para B(2) above.

    b. For Semi-liquid securities having average of 1-10 trades (face value >=Rs.5 crores) per day during previous calendar month - 1.5 times the adjusted VaR as per para B(2) above.

    c. For illiquid securities having average of less than 1 trade (face value>=Rs.5 crores) per day during previous calendar month - 2 times the adjusted VaR as per para B(2) above.

4. In terms of para B of Chapter IV of the Regulations of the Securities Segment, if the value of the Borrowing Limit computed as per para B (1) above, exceeds the following thresholds, a concentration charge shall be collected in the form of additional haircut levied on the securities forming part of the Borrowing Limit:

[1] CCIL's MTM prices are clean prices

Value of Borrowing Limit (as per para B(1) above)	Additional Haircut (as % age of Total Haircut on Securities forming part of Borrowing Limit)
Less than Rs. 10,000 Crores	Nil
Greater than or equal to Rs. 10,000 crores and less than Rs. 20,000 crores	15% of the Haircut
Greater than or equal to Rs. 20,000 crores	20% of the Haircut

5. In terms of para A(II) of Chapter VIII of the Regulations of the Securities Segment, CCIL shall levy additional haircuts on collateral deposited by members having lower credit ratings. Further, apart from the credit rating/grading linked step-up of haircuts, the Clearing Corporation may also levy additional haircuts in case of any regulatory action against the member or deterioration in its financial position or some adverse market report. Such additional step-up factors if imposed on a Clearing Member, shall also apply to all its constituents.

C. **Online exposure monitoring**:

The exposure monitoring shall be online and on a pre-order basis. This would ensure that orders may be placed only if the Member has sufficient Initial Margin and/or Borrowing limit to support the resultant trades.

D. Mark to Market (MTM) margin

1. Outstanding TPR trades shall be revalued at end of every day using the end of the day (EOD) MTM rates and the loss in value if any will be collected as Mark to Market (MTM) margin. TPR collateral shall also be revalued at the end of every day using CCIL's EOD MTM prices and the applicable haircuts. The detailed process followed is described in Annexure A (I). In terms of Chapter IV of the Regulations of the Securities Segment, interest received on securities contributed to TPR Collateral may be retained by Clearing Corporation, in case the revalued Borrowing Limit of the Member / its Constituent on interest payment date falls below the utilized Borrowing Limit towards Triparty Repo trades accepted for settlement. Residual shortfall if any, after such interest retention would be required to be replenished latest by 9:00 AM on the next business day to avoid levy of penal charges. Such interest amount retained shall not be available for meeting any margin obligation and can be withdrawn by the member after replenishment of the Borrowing Limit shortfall. The request for withdrawal shall be by way of a cash withdrawal notice as per the workflow process notified from time to time.

2. In terms of provisions of, Chapter VIII of Regulations for Securities segment, the Clearing Corporation shall revalue all the outstanding TPR trades and /or TPR collateral balances of the members at 12:00 Noon and 3:00 PM everyday using the latest available rates and prices. If such revaluation indicates substantial erosion in the margins / TPR collateral in the account of any member, then the Clearing Corporation shall impose Intraday Mark to Market (MTM) margin. The detailed process to be followed for assessment of applicability of intraday MTM margin is described in Annexure A(II).

3. Intraday MTM margin, if applicable, shall be collected immediately. Upon imposition, if there is margin inadequacy/shortfall, it shall be the responsibility of the concerned member/s to replenish the shortfall within one hour from the time of imposition; else penal charges will be levied as applicable.

E. Volatility Margin

1. The Clearing Corporation may impose volatility margin in case of a sudden increase in volatility in interest rates. An increase in market volatility as indicated by imposition of Volatility margin in the segment will result in a corresponding increase in haircut rates applicable on the securities deposited towards TPR Collateral. The magnitude of this volatility adjustment to haircut would be equal to the volatility margin imposed in the Securities Segment.

2. Imposition of Volatility Margin will therefore result in revaluation of the securities deposited towards TPR Collateral. Such revaluation shall be carried out using prices derived from outright trades of the day in these securities. Securities for which traded prices as mentioned above are not available would be valued at the price at which they were last valued. Revised haircut would be applied on prices at which securities are revalued.

3. Such increase in haircut rates on account of imposition of Volatility Margin may result in reduction in value of securities deposited as TPR collateral. If it is observed that after such revaluation, the member's borrowing limit utilisation exceeds the value of the TPR collateral deposited, then it will be the responsibility of the said member / its constituent to replenish the shortfall within one hour from the time of such imposition.

4. In case such revaluation of securities results in increase in value of collateral even after applying the increased haircut rate, such increase in value shall be ignored.

5. The adjustment for volatility margin to the applicable haircut shall be temporary and shall be reduced / withdrawn with the reduction / withdrawal of volatility margin in the Securities Segment.

The revised approach, as above shall be effective from **05th Jul'25**.

For The Clearing Corporation of India Ltd

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Managing Director

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Annexure A (I)

Triparty Repo trades - Imposition of MTM Margin

I. End of the Day MTM margining process:

(a) All the outstanding trades (i.e. T+1 trades of the day) shall be considered for End of the Day MTM margin computation.

(b) End of the day MTM rates for TREPs shall be worked out as detailed below:

  i. Weighted average rate of last five or such lower number of (if there are less than five trades) T+1 trades (excluding outliers, if any) in the same TREP.

  ii. Weighted average rate of same TREP traded on T+0 basis in case there is no trade in the concerned TREP on T+1 basis on the particular day.

  iii. Rate interpolated or extrapolated from TREPs of nearby maturities. In the absence of the same, CCIL's NSS ZCYC rates / market repo rates of the corresponding tenors will be used.

(c) Securities placed by the members in Triparty Repo Collateral, shall be revalued using CCIL's MTM prices and the applicable haircuts thereon (Accrued Interest shall be added to the net value of the security). Securities debited for outstanding TREPS obligation shall be valued based on their MTM price, haircut and accrued interest at the time of debit. MTM loss on such securities shall be computed using CCIL's EOD MTM price and latest haircut rate. In case such revaluation results in a Borrowing Limit Shortfall, then the Members will have to deposit additional collateral by 9:00 AM on the next business day to replenish the shortfall.

(d) MTM loss on TREP trades shall be arrived after allowing full offset between outstanding trades in different TREPs (i.e. MTM gain on position in one TREP shall be set off with loss on position in another TREP). MTM margin will be the net loss amount (Net MTM gains will be ignored).

(e) Margin Shortfall if any, at end of the day will be required to be replenished by 9:00 AM on the next business day.

(f) Failure to replenish the margin shortfall by 9:00 AM on the next business day shall attract penalty in terms of Chapter VI Regulations of the Segment.

Annexure A(II).

Assessment and applicability of Intraday MTM margin:

(a) The processes of assessing applicability of intraday MTM margin shall be carried out at 12:00 Noon and at 03:00 PM. Moreover, on volatile days, Clearing Corporation may collect intraday MTM margin at such other time of the day as may be required.

(b) Computation of Intraday MTM Rates

i. Weighted average rate of last five or such lower number (if there are less than five trades) of T+0 trades (excluding outliers, if any) in the same TREPs.

ii. Weighted average rate of same TREP traded on T+1 basis in case there is no trade in the concerned TREPs on T+0 basis on the particular day.

iii. Rate interpolated or extrapolated from TREPs of nearby maturities. In the absence of the same, CCIL's NSS ZCYC rates / market repo rates of the corresponding tenors will be used.

(c) All the outstanding TPR trades as at the time of computation (including trades outstanding at previous EOD and new trades concluded on the current day) shall be valued using the MTM rates derived based on the trades concluded on the trading system till the time of intraday valuation.

(d) Securities placed by the members in Triparty Repo Collateral towards TPR borrowing shall be revalued using the latest available intraday MTM prices arrived at for computation of intraday MTM margin in Securities segment. The value of such securities as at intraday prices and as at previous EOD prices shall be arrived at and loss, if any will be taken into consideration.

(e) Net MTM loss in the portfolio of a member shall be sum of net MTM value depletion on trades and the reduction in value of securities utilised towards Triparty repo borrowing.

(f) If the net MTM Loss arrived at as above exceeds 30% of the sum of the haircut levied on the collaterals under charge (including stepped up or additional haircut / concentration charge) and Initial Margin collected at the time of computation of intraday MTM, such net MTM loss shall be the Intraday MTM margin payable by the member.

(g) If applicable, the Intraday MTM margin/Gain reduction is collected immediately. Upon imposition, if there is margin inadequacy/shortfall, it shall be the responsibility of the concerned member/s to replenish the shortfall within one hour from the time of imposition; else penal charges shall be levied as applicable.

(h) In case the intraday MTM margin payable by a member at 03:00 PM is lower than the intraday MTM margin already collected from the members based on prices at 12:00 noon, such excess intraday MTM margin shall be released by CCIL.

Annexure A(III)

Hair-cut Computation Process:

(a) Haircuts on securities deposited towards Borrowing Limit are computed using a Historical Simulation based Value at Risk (VaR) model with a 5 day Margin Period of Risk (MPOR) confidence level of 99%.. Anti-procyclicality measures are incorporated in the model.

(b) The detailed model is as under:

i. The floor (minimum value) for 1 day VaR for securities in a tenor bucket shall be recalibrated to 95th percentile 1 day VaR values. If the VaR of the security is less than the floor value applicable for the security in particular tenor bucket then thefloor value will be retained as the applicable VaR.

ii. The process followed to arrive at the floor shall be as under:

a) All securities will be divided into tenor-wise buckets based on residual maturity. Each tenor bucket will be divided into two categories:

1) Category I - GOI Securities & T-Bills (Excluding Special Bonds)
2) Category II - STRIPS

b) The tenor buckets will be 0-3 Months, 3M – 6M, 6M - 1 year, 1-3 years, 3-5 years, 5-10 years, 10-15 years, 15-20 years, 20-30 years and above 30 years.

c) Historical data starting from Dec'2006 shall be considered for arriving at the floor (minimum) values. To arrive at the floor, for a tenor bucket, the 95th percentile 1 day VAR value will be computed for rolling periods of 10 years length, with the latest such period being the period preceding the date of fortnightly revision of haircut rates. The highest value amongst all such 1 day VAR values, for the bucket shall be scaled as per the applicable margin period of risk (MPOR) to determine the floor for the haircut rates for all securities in that tenor bucket.

d) The floor (minimum value) as computed above for category I will be applicable to both Central Government Securities and Treasury Bills (excluding Special Bonds) falling in respective tenor buckets, except STRIPS. The floor values for STRIPS will be calculated separately under Category II.

Annexure B

Illustration of the application of the revised margining logic for Triparty Repo trades

Scenario 1

Member has only borrowed in Triparty repo in a particular tenor

Borrow	Lend	Net Borrow	Net Lend	TREPS Tenor	IM @ 0.50%
100	0	100	0	O/N	0

Scenario 2

Member has only lent in Triparty repo in a particular tenor

Borrow	Lend	Net Borrow	Net Lend	TREPS Tenor	IM @ 0.50%
0	100	0	100	O/N	0.5

Scenario 2

Member has both borrowed as well as lent in Triparty repo but for different 2nd leg settlement dates

Borrow	Lend	Net Borrow	Net Lend	TREPS Tenor	IM @ 0.50%	Will the interest loss on offsetting trades also be captured as IM?
0	100	0	100	O/N	0.5	NO. The Borrow and Lend trades have different 2nd leg settlement dates
100	0	100	0	1 Month	0	

Scenario 3

Member has both borrowed as well as lent in Triparty repo but has a net borrow position in a particular tenor

Borrow	Lend	Net Borrow	Net Lend	TREPS Tenor	IM @ 0.50%	Will the interest loss on offsetting trades also be captured as IM?
300	100	200	0	O/N	0	YES, on 100 crores if the interest rate on borrowing > interest rate on lending

Scenario 4

Member has both borrowed as well as lent in Triparty repo but has a net lend position in a particular tenor

Borrow	Lend	Net Borrow	Net Lend	TREPS Tenor	IM @ 0.50%	Will the interest loss on offsetting trades also be captured as IM?
100	300	0	200	O/N	1	YES, on 100 crores if the interest rate on borrowing > interest rate on lending