THE CLEARING CORPORATION OF INDIA LTD

Risk Management Department

No. RMD/DRV/26/15 **Date: 19 May 2026**

FOR INFORMATION OF ALL MEMBERS

FX Options Segment

Risk Management Processes and Margining Methodology

In terms of the provisions of Chapter VI-Margins of the Regulations of the FX Options Segment, the Clearing Corporation prescribes margin requirements for this segment. This notification details the risk management process and margining methodology in this segment.

In terms of the Regulations, available balance in Member's Common Collateral (MCC) account shall be utilized towards margin obligation of a member arising out of acceptance of FX Options trades for clearing. The margins shall be charged on the cleared outstanding portfolios comprising USD/INR Option trades, delta hedge forward trades and spot trades arising from exercise of options.

Members are advised to take note of the changes in SOMM parameter at Para I (e)

I. Initial Margin

a. Initial Margin shall be computed at a portfolio level and shall have the following components:

(i) Portfolio Risk (PR)

(ii) Calendar Spread Margin (CSM)

(iii) Short Options Minimum Margin (SOMM)

b. Initial Margin shall be computed as the higher of (1) Sum of Portfolio Risk and Calendar Spread Margin and (2) Short Options Minimum Margin (SOMM).

c. Portfolio Risk (PR)

The Portfolio Risk of the Options portfolio (including delta hedged forward trades) shall be computed from the Profit and Loss series evaluated over the following two sets of scenarios:

(i) The first set shall be based on a historical simulation-based portfolio Value at Risk (VAR) model. It shall comprise 1000 scenarios of volatility-scaled risk-factor returns from the recent history. Risk factors shall include USD/INR Spot rate, implied volatilities of USD/INR FX options for standard instruments, domestic (INR) interest rates and foreign (USD) interest rates.

(ii) The second set shall comprise hypothetical stylized scenarios of specified combinations of risk factor returns including extreme risk factor returns from a stress period in history.

For each scenario, the portfolio-level (option portfolio including the delta hedge forward trades) profits and losses shall be evaluated by calculating the change in value of portfolio from the current value.

Portfolio Risk shall be higher of:

(i) 99^{th}-percentile loss from the first set of historical scenarios.

(ii) Highest loss from the second set of hypothetical scenarios.

The first set of the scenarios shall be modelled using the logarithmic returns of the historical values of the risk factors over a recent 1001-day period. Returns shall be computed by taking logarithmic change in risk factor values over one-day horizon. Exponentially Weighted Moving Average (EWMA) volatilities will be calculated for each risk factor for each day in this historical period. Historical return series will be volatility scaled by multiplying each historical return by the ratio of current (day of IM computation) EWMA volatility and historical EWMA volatility. The EWMA volatilities shall be based on 100-days look-back period and a decay factor of 0.94. The one-day logarithmic returns shall be further scaled by the square-root of Margin period of Risk (MPOR) of 5 days.

The hypothetical scenarios shall be calibrated by defining a Price Range and a Volatility Range. Price range and Volatility range are the ranges for spot rate returns and implied volatility returns respectively. Stress VAR period applicable for Initial Margin model in Forex Forwards segment[1] shall be used for determining Price range and Volatility range. The scenarios shall be constructed using various combinations of spot rate shifts and implied volatility shifts within the upper and lower bounds defined by the Price Range and Volatility Range.

d. Calendar Spread Margin (CSM)

Portfolio risk evaluation is based on an assumption that the risk factor movements for instruments with different maturities are correlated. However, there is likely to be deviations from historically observed co-movements and therefore gains on certain positions may not perfectly offset the losses on other positions which are offsetting. Therefore, in order to mitigate this basis risk associated with varied option maturities in the portfolio, some of the margin offset benefits shall be disallowed by levying Calendar Spread Margin.

Calendar Spread Margin (CSM) shall be levied by segregating the positions into various maturity-based buckets (for e.g., 0-3M, 3M-6M and so on) and then identifying the intra-bucket spread positions and inter-bucket spread positions based on expiry date-wise net position delta.

There shall be four maturity-based buckets, which are defined as follows:

(i) Bucket 1 – trades with residual maturities less than or equal to 3 months.
(ii) Bucket 2 – trades with residual maturities greater than 3 months and less than or equal to 6 months.
(iii) Bucket 3 – trades with residual maturities greater than 6 months and less than or equal to 9 months.
(iv) Bucket 4 – trades with residual maturities greater than 9 months.

[1] Please refer to CCIL's Notification No RMD/FX-FF/25/01 dated 13-Jan-25 on the Risk Management process and margining methodology in the Forex Forwards segment

The intra-bucket spread shall be determined by aggregating all expiry date-wise positive delta figures and all expiry date-wise negative delta figures in each bucket. The intra-bucket spread shall be the lower of the two delta values in absolute terms. For example, if aggregate of all expiry date-wise positive delta figures is +20 million and if aggregate of all expiry date-wise negative delta figures is -15 million in a particular bucket, then the intra-bucket spread position to be considered for calendar spread margin shall be 15 million. The residual delta of the bucket (+5 million) shall be used for assessing inter-bucket spreads.

The inter-bucket spreads shall be determined by comparing the residual deltas of bucket pairs. For example, if residual delta in bucket 1 is +10 million and residual delta in bucket 2 is -25 million, then the inter-bucket spread between bucket 1 and bucket 2 shall be |10 million|). Similarly, the inter-bucket spreads shall be determined for all pairs, such as 1-2, 2-3, …,1-3, 2-4, …,1-4, … and so on. Calendar Spread Margin shall be then applied on these spread positions.

The intra-bucket spread margin and inter-bucket spread margin for various bucket pairs on a per delta spread position shall be as follows:

Delta-based spread between	CSM per delta spread (%)
Intra-bucket	0.21%
Buckets 1 & 2, Buckets 2 & 3 and Buckets 3 & 4	0.37%
Buckets 1 & 3 and Buckets 2 & 4	0.52%
Buckets 1 & 4	0.75%

e. Short Options Minimum Margin (SOMM)

In case of deep-out-of-the-money short options, the margin requirements may increase significantly in case of a large movement in underlying. Therefore, a minimum margin in the form of SOMM shall be levied on portfolios containing short option positions. SOMM shall be computed as higher of the sum of short Call Option

notional and the sum of short Put Option notional, multiplied by SOMM rate. The SOMM rate shall be ~~1.25%~~ 2.00 % of the prevailing USD/INR Spot rate.

f. Initial Margin on Spot trades and delta hedge forward trades settling in two business days (S-2)

The net position arising from Spot trades created on account of Option exercise and delta hedge forward trades with residual maturity of (S-2) days shall be subject to a factor-based Initial Margin (and excluded from Portfolio based initial margin) post option expiry till end of (S-2) day. This margin factor shall be applied on the INR equivalent of the net USD position with the INR value being determined by using the fixing rate for the date.

g. Step up in Initial Margin for weaker entities

The Clearing Corporation may collect higher Initial Margin from members having lower Counterparty Risk Assessment (CPRA) Grades. Additionally, the Clearing Corporation may also levy higher margins in case of any regulatory action against the member or deterioration in its financial position or some adverse market report.

II. Volatility Margin

Volatility Margin shall be levied in case of significant volatility in one or more risk factors. Volatility Margin will be charged as percentage of Initial Margin. The methodology for tracking the applicability, imposition and withdrawal of volatility margin for this segment shall be as per the process notified for Forex Forward Segment. If applicable, Volatility Margin will be imposed immediately, after notifying the members. Imposition of Volatility Margin may result in margin shortfall if available MCC balance is inadequate to cover the increased margin requirements. Failure by a member to replenish such shortfall in its account, within one hour from the time of imposition shall invite levy of penal charges, as applicable.

III. Net Premium Margin

Net premium amount (across all buy and sell option transactions) payable by a Member shall be the Net Premium Margin requirement on account of such Member. The margin shall be applicable from the point of trade until the time of premium settlement. If the net premium amount is receivable for a Member, then such amount shall be given as a credit to the Member's MCC account. Such credit will be withdrawn on premium settlement date. If such a withdrawal of credit results in a margin shortfall, the settlement proceeds arising out of the premium receivable by the option seller shall be withheld to the extent of such shortfall. In terms of Clause E (4) of Chapter VIII of the Regulations, such, withheld settlement proceeds will be released on replenishment of the margin shortfall. In terms of clause E (4) of Chapter VIII of the Regulations, 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 MCC account of the member without any further notice to the member.

IV. Net Options Value (NOV)

Net Options Value (NOV) shall be computed as the sum of the values of all long option positions less the sum of the values of all short option positions in a portfolio at the time of acceptance (clearing) of each option trade and on an end-of-the-day (EOD) basis. Negative NOV shall be collected as a margin while positive NOV reduced by a prescribed haircut shall be given as a credit to the Member's MCC account and the same is allowed to be treated as Margin Made Available. The hair-cut on MTM gains will be 5% and the same may be revised in the future after due notification. NOV will also be revalued at the time of intra-day MTM assessment.

V. MTM Margin (or Gain) on Spot trades created from exercised Options and delta hedge forward trades

The Spot rate, forward premia and the interest rate used for valuation of spot and delta hedge forward trades will be sourced as described in para XIII below. Full offset shall

be provided between MTM loss and MTM gain across all settlement dates. If the aggregate MTM value for all such settlement date-wise positions shows MTM loss, the same will be collected as MTM margin from concerned member by blocking free balance available in the margin account to the extent required. If the aggregate MTM value of all such settlement date-wise positions shows MTM gain, then the concerned member's MCC/ margin account is credited with the MTM gain amount reduced by a prescribed haircut and the same is allowed to be treated as Margin Made available. The hair-cut on MTM gains will be 5% and the same may be revised in the future after due notification. Such margin made available can be used against margin requirements in the Options segment as well as in any other segment which draws margins from the MCC. Like NOV, marking to market may also be carried out at the time of intra-day MTM assessment, which is discussed in the para below. Spot trades created on account of Option exercise and delta hedge forward trades settling in 2 business days shall be marked to market separately from rest of the portfolio at the time of Options expiry using the fixing rate for the day. The Mark to Market Margin / Gain shall be released from FX option segment when the afore-mentioned Spot trades and the delta hedge forward trades are transferred to the Forex Settlement segment at the end of S-2 day, in terms of clause IX below.

VI. Intraday MTM Assessment

All outstanding trades at the time of computation of intraday MTM margin will be considered for assessing applicability of intraday MTM margin. Any intra-day reduction in MTM gain on a member portfolio will be also treated as intraday MTM loss. The NOV and MTM Margin (Gains) shall be assessed on an intraday basis using the latest available market data at 12 PM. Based on the assessment, if the loss in the portfolio is greater than 30% of the sum of Initial Margin and Volatility Margin requirements of the Member, then such loss is collected on intra-day basis and the revised NOV and MTM margin / gain requirements shall become effective immediately.

VII. Crystallized Settlement Obligations (CSO)

1. Discounted value of any amount determined as payable or receivable by the Member due to full / partial early termination is termed as Crystallized Settlement Obligation.
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/ constituent.
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 for a member, the corresponding amount is held back from the 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 to MCC account of the member.
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 of the member.
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 Net Premium margin collected from such Member to their respective Crystallized Settlement Obligation Account.

VIII. Margin Held Back for Default (on settlement)

In case of a settlement shortage on the premium / CSO settlement date, the equivalent Net Premium margin and CSO payable adjusted for interest thereon shall be blocked as “Margin Held Back for Default (MHBD)”. The margin shall be applicable from the time of shortfall till replenishment of shortfall and payment of penalty, if any, applicable on the same (i.e., MHBD shall be released only on replenishment of the entire shortage amount and payment of penalty.)

IX. Risk Management of Spot trades and Forward trades settling in two business days (S-2)

The Spot trade created on exercise of options and the forward trades settling in two business days shall be transferred to the Forex Settlement segment at the end of S-2 day. On transfer, such trades/positions shall be evaluated as per the risk management framework of the Forex Settlement segment and shall be excluded from margin computations in FX Options segment.

X. Rejection Level

The Clearing Corporation will stop acceptance of further trades if such trades will cause the margin utilisation to exceed 95% of collateral made available for this segment.

XI. Margin Shortfall

(i) A Margin shortfall arises when the margin requirement of a member exceeds the margin made available by the member. A Margin shortfall may be recorded on intra-day MTM assessment, imposition of Volatility margin, on expiry of Options, acceptance of trade concluded on CCIL's anonymous trading platform and consequent reassessment of margins, at the time of settlement, or at the time of end of the day margin re-valuation process.

(ii) Failure by a member to replenish such margin shortfall, within one hour from the time of such margin shortfall shall invite levy of penal charges, as applicable.

(iii) If the aforesaid margin shortfall is recorded at the time of end of the day margin re-valuation process, same would be required to be replenished by 9-00 AM on the next business day to avoid levy of penal charges.

XII. Frequency of exposure check [Reference Chapter IV (G)(1) of the Regulations]

Eligible FX Option and delta hedge forward trades will be subjected to check for adequacy of margins for both the counterparties to the trade on a trade-by-trade basis. The 'Exposure Check' process will be 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.

XIII. Pricing Models and Market Data

1. Pricing Model: Garman-Kohlhagen model will be the valuation / margining model for USD/ INR Options.
2. Market data: The market data inputs along with their sources that will be used for valuation/ margining are mentioned below:
   a) Spot Exchange Rate (USD/INR) will be sourced from FX Clear.
   b) Foreign (USD) interest rate curve will be the SOFR curve sourced from standard market data source.
   c) Domestic (INR) interest rate curve will be derived from the Forward premium sourced from standard market data source. Spot exchange rate (as in (a) above) and Foreign (USD) interest rate curve (as in (b) above).
   d) Implied volatility quotes for standard maturity pillars (viz. 1 BD, 1 week, 1M, 2M, 3M, 6M, 9M, 12M) for standard option instruments from standard market data source:
      - 10 Delta Risk Reversal
      - 25 Delta Risk Reversal
      - ATMF/ DNS
      - 10 Delta Butterfly Spread
      - 25 Delta Butterfly Spread

For expiries less than or equal to nine months, At-the-Money Forward Volatility will be used. For expiries greater than nine months, market-quoted Delta Neutral Straddle (DNS) volatilities will be used.

This notification shall be effective from **01st Jul'2026**.

For The Clearing Corporation of India Ltd

Sd/-

Managing Director