2nd June, 2022

THE CLEARING CORPORATION OF INDIA LTD
Forex Department

Consultation Paper on Integration of Forex Settlement & Forex Forward Segment

1. Introduction:

1.1 The Clearing Corporation of India Ltd. (CCIL) has been offering CCP clearing of USD/INR trades of interbank participants since November ’02. The CCP clearing services are offered in two separate clearing segments viz:

1.1.1 Forex settlement segment (service commenced in 2002):

1.1.1.1 In this segment trades are settled on the settlement date by payment of the respective currencies. Net USD and INR positions arising out of cash, tom, spot and forward trades done by members are settled in this segment.

1.1.1.2 Till 2015, the settlement was not on Payment versus Payment (PvP) basis. Each currency was settled in its respective time zone. As a result, the underlying risk was mainly the principal risk from failed settlements.

1.1.1.3 After the settlement mode was upgraded to Payment versus Payment (PVP) the risk arising out of the settlement is market risk.

1.1.2 Forex Forwards segment

1.1.2.1 CCIL commenced CCP clearing of Forward trades in USD/INR in Dec ’09.

1.1.2.2 These are deliverable forward trades and on maturity, are settled in the USD/INR settlement segment.

1.1.2.3 CCP clearing of forward trades exposes CCIL to pre-settlement risk which is nothing but market risk i.e. risk from exchange rate fluctuations.

1.2 Prior to the migration to PVP based settlement, the market risk exposure in both segments was covered by the collection of risk based margins. However, the element of principal (credit) risk in the forex settlement segment warranted an additional tool in the form of default loss allocation to non-defaulting members in the Forex settlement segment. Moreover, as the risks were different for both segments and principal risk in the forex settlement segment was to be covered through bilateral loss allocation, the two clearing segments were kept separate. Since in the initial years, not all Forex segment members were keen to avail CCP clearing for their forward trades the concept of two separate segments was also widely accepted by members.

1.3 In April '15, CCIL migrated to Payment versus Payment (PVP) mode of settlement in the Forex settlement segment. With PVP in place, CCIL was no longer exposed to credit risk in this segment. Risk management process for this segment was substantially modified to cope with this change. The biggest change being that default handling in the forex settlement segment does not provide for bilateral loss allocation any more.

1.4 In both segments CCIL covers its market risk exposure by collecting Initial Margin, Mark to Market Margin and Volatility Margin. In the Forex settlement segment each member is assigned a Net Debit Cap (NDC) for each currency. The exposure limit availed by a member is supported by collateral in the form of USD cash and is capped at its NDC. The net sell position of a member in any currency cannot exceed the exposure limit. Members are permitted to avail higher limits on S-1 and S-2 days.. However, such additional exposure has to be supported by Additional Initial Margin (AIM). In both the segments, current exposure is covered by charging Mark to Market (MTM) margins.

1.5 In both the segments, Members now contribute to a Default Fund which is arrived at based on CCIL's stress test results. CCIL also contributes to a Settlement Reserve Fund which forms its "Skin in the Game" (SIG) in the event of a default. Together these two funds form the pre-funded resources for default handling. There is a default waterfall in place which describes how these resources will be used to meet any uncovered loss on default..

1.6 As far as default handling is concerned, in the Forex Forwards segment, CCIL's Regulations provide for the defaulter's positions to be sold to the non defaulting members in an auction conducted by CCIL. In the forex settlement segment, a default would arise out of un-replenished settlement shortages which would be handled by withholding the counter value currency and the margins collected from the member.

1.7 In the Forex settlement segment, Base Initial Margin which is charged as a percentage of the Exposure Limit is collected in USD dollars. However, all other margins may be deposited in the form of eligible liquid Govt. of India Securities and/or in INR Cash. In Forex Forward segment all margins are collected in the form of eligible liquid Govt of India Securities and/or in INR Cash.

1.8 In recent years, all members of the Forex Settlement segment have taken membership of the Forex Forwards segment as well. Some members have highlighted that CCIL may consider having a single Forex segment instead of two separate segments as the market risk factors impacting the two segments are the same and merging the two segments will be beneficial to members as they would then have to contribute to a single default fund.

1.9 In view of the above, it is proposed to integrate Forex Settlement segment with Forex Forward segment. This can bring in additional efficiencies to the system.

2. Integration of these Forex Settlement & Forex Forward Segments:

2.1 Implications on Risk Management:

Post the merger, the new segment will have a uniform risk management process for covering the market risk. The Net Debit Caps would continue to be in place for liquidity risk management. Broadly the approach to be followed for risk management in the merged segment will be as under:

2.1.1 The existing portfolio margining for forward trades will now be extended to all forex trades (including trades in spot window). Further, the CCP clearing for constituent trade which is currently allowed for Spot (S-2) and beyond will be extended to S & beyond, post which Constituent positions as per the extant practice will be merged with position of Clearing member on S day for settlement purpose. The current practice of charging stepped up margins for weaker entities will continue. In addition, as is the case currently, there would be a settlement limit in the form of NDC..

2.1.2 Presently the exposure limit availed by a member is capped at its NDC. Members are permitted to avail higher limits i.e. three times EL on S-2 day and 2 times EL on S-1 day provided they deposit additional Initial Margin. These higher limits can be used to support either the cleared forward positions moving into the forex segment from the forex forwards segment or fresh positions in the spot window. Forward positions which move into spot window may be in excess of the higher limit permitted on S-2 day. These excess positions then continue to remain in forward segment till the member gets these positions within the exposure limit by the specified time on S day. In case the member fails to do so by the specified time on S day, the positions are cash settled. Members whose positions are cash settled bear loss that the allocatees may suffer due to this. Incidentally in the last 13 years since the launch of the CCP clearing service, cash settlement of positions in breach has never been invoked. s Strict monitoring of limit on S-2 and S-1 days results in members' trades remaining in pending acceptance at CCIL and they continue to carry bilateral exposures to one another.

2.1.3 It is therefore proposed that post the integration, the liquidity limit monitoring through the NDC will be enforced strictly on the S day only. As the cash market in USD/INR is generally active up to about 11 a.m., it is therefore proposed that from 11 a.m. of the settlement date, hard limits would be imposed wherein positions would be accepted to the extent of limit available. Positions which are already accepted, but are in breach of the exposure limit will have to be covered by say 1:30 p.m. by reporting an off-setting buy trade, pre-funding or entering into an I/O swap bilaterally. Cash settlement time may be set at say 2:00 p.m. on settlement date i.e. members will have to ensure that positions in excess of the exposure limit are brought down to within their exposure limits by 2-00 pm failing which they will be subjected to cash allocation.

2.1.4 It is proposed to introduce an Inside/Outside Swap facility (I/O Swap) by CCIL similar to being followed by CLS Bank. The In/Out Swap mechanism will help to balance a member's liquidity requirements both inside and outside CCIL settlement. Members shall advise a list of counterparties and limits with each counterparty with whom I/O swap can be undertaken by CCIL. CCIL, subject to availability of counterparty limits, shall trigger an I/O swap trade with the identified bilateral counterparty for positions in excess of Exposure/Settlement Limit after 1:30 p.m. The first leg would be settled in CCIL thereby bringing down the position of a Member within the exposure/ settlement limit. The second leg would be settled by the members bilaterally outside CCIL. These swaps would be executed in such a manner until every member's position in breach is covered by way of a swap, subject to bilateral counterparty limits. Balance positions, if any, shall be cash settled. An illustration of how I/O Swap process works has been presented in **Annexure I**.

2.1.5 CCIL's system will give timely alerts to members who are in breach of their exposure limits. In addition, strong disincentives could be created to discourage clearing participants from maintaining their positions at levels which are in excess of their exposure limits at the stipulated cut off time. Few possibilities are existing additional loads on close-out at 1 Paise per USD with the right of the allocatees to claim any loss to them for covering their positions could continue with a penalty in addition.

2.1.6 Regulatory guidelines require CCIL to have committed collateralized lines of credit with the collateral being in the form of USD securities. Hence, as is the current practice, participants will continue to be required to deposit part of the margins in US dollars.

2.1.7 A brief comparison of the risk management processes of the two segments today and the overview of the risk management being considered in the integrated segment is enclosed as **Annexure II**.

2.2. Benefits to the Clearing Participants:

2.2.1 The merger of the two segments is expected to bring in significant benefits to the clearing participants. Since margins are presently computed separately for forward positions and separately for positions accepted for clearing in the spot window, potential margin offset benefits may be lost in some cases. Post integration, the portfolio margining of all outstanding forex trades will have the potential for optimization of the margins contributed. They are also likely to have lower contribution requirements to the member contributed default fund. Currently, members contribute towards separate default fund in USDINR segment and Forex Forward segment. However going forward post the merger it would be one single consolidated default fund for the Forex Segment.

2.2.2 The participants would be able to trade for larger value of trades on S-2 and S-1 day by CCIL. This will give them and their counter-parties significant benefits in terms of better utilization of counter-party limits. CCIL's on-line acceptance of trades and an anonymous trading system with CCP acceptance of trades with full information availability will increase the depth of the market and expand the liquidity available in the market. Relatively smaller players will also have significant ease in trading at market driven prices thus benefitting customers as well.

2.2.3 With the introduction of CCIL's clearing of Forward USD/INR trades and all major participants joining the system, the risk from open exposures have come down sharply. With PvP settlement and on-line acceptance of trades by CCIL, even in spot market the exposures are getting efficiently netted reducing risks in the market. The process of integration will allow all trades of participants in spot market to get accepted in the system and hence would eliminate the residual risk that is still continuing in the market (as the counterparty exposure of the participants continue for the trades which are not accepted on limit constraints).

3 All Members are requested to give their suggestions and feedback on the above proposal so as to take this proposal forward. The feedback may be sent to us latest by **30th June, 2022** at frx@ccilindia.co.in and rmd@ccilindia.co.in for the attention of Senior Vice President, Forex Department or Chief Risk Officer with subject "*Integration of Forex Settlement & Forex Forward Segment*".

4. For any clarification please contact on 022-61546422/6430/6416/6452/6453.

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Annexure I

Illustration for Proposed In/Out Swap Mechanism:

The In/Out Swap Mechanism is a service under which CCIL will identify potential swap transactions that would reduce the participating Members obligations in order to bring the same within assigned limits. An illustration of In/Out Swap Transactions is as under:

Assume that Members have the following positions that are in breach of Settlement Limit on Settlement date:

Member Positions and Breach details (in USD mio):

Member	Net Position	Exposure Limit	Breach / Excess
A	-475.00	300.00	-175.00
B	-375.00	300.00	-75.00

The In/Out Swap facility will target to bring down the positions in excess of Settlement Limit. This will be based on list of counterparties and limits assigned against each counterparty by the Members. For the purpose of this illustration, it is assumed that counterparty limits are available for the following members:

Members	A	B
C	150	150
D	100	50
E	200	100

Following In/Out Transactions are determined:

In/Out Transaction Details:

Trades No	In Leg of the In/Out Transaction	
1	A +175	E -175
2	B +75	C -75

In/Out Trade 1:

Based on the Counterparty limit assigned by Member A, a trade of USD 175 mio is determined between Member A and Member E where Member A buys USD 175 mio from Member E. Hence, breach for Member A is completely exhausted.

In/Out Trade 2:

Based on the Counterparty limit assigned by Member B, a trade of USD 75 mio is determined between Member B and Member C where Member B buys USD 75 mio from Member C. Hence, breach for Member B is completely exhausted.

The Out Leg of the above swap transaction will be settled bilaterally by the Members outside CCIL.

Annexure II

Comparison of key features of the risk management in the Forex Settlement Segment and the Forex Forwards segment:

Sr No	Particulars	Forex Settlement Segment	Forex Forwards Segment	Proposed risk management in the integrated Forex Segment
1	Market risk coverage PFE	Factor based initial margin for each day in the Spot window. Margin Factor is based on a 3 day VaR. Margin factor is subject to a floor computed over a relatively longer look-back period. Margin factors are stepped up for weak entities	Portfolio margining in place. All forward positions of the member *(including those pending acceptance in the spot window)* are considered together for margining. Spread margin added to portfolio Initial Margin to arrive at applicable Initial Margin. Minimum Initial Margin is in place so that IM is charged above minimum IM. MPOR will be 5 days. Stepped up IM charged to weaker entities.	Same as is being done presently for Forex Forward segment *except* that All USD INR positions will be taken together as portfolio for margining purpose *(no segregation of spot window positions)* Minimum Initial Margin will continue to be in place so that IM is charged above minimum IM. Stepped up IM charged to weaker entities
2	Market risk coverage Current exposure	Mark to Market margin charged every day at end of the day. Applicability of MTM margin is assessed twice intra day	Mark to Market margin charged every day at end of the day. Applicability of MTM margin is assessed twice intra day.	No change in process
3	Volatility Margin (VM)	Volatility tracking model in place for tracking volatility of the USD INR **spot rate**. VM imposed if triggered	Volatility tracking model in place for tracking volatility of the USD INR **forward exchange rates**. VM imposed if triggered	A generic volatility tracking model will be implemented
4	Liquidity Risk management	Managed by setting Net Debit Caps (NDC) for individual members in each currency. Members can avail lower exposure limits and the same has to be supported by collateral.	Not applicable (forward positions are eventually settled as part of the forex segment)	Net Debit Caps (NDC) will continue to be in place but for S day only. Members will be expected to bring their positions within the EL by a specified time on S day.

Sr No	Particulars	Forex Settlement Segment	Forex Forwards Segment	Proposed risk management in the integrated Forex Segment
		The EL is monitored on each day in the spot window (higher limits are permitted on S-1 and S-2 days) Higher EL has to be supported by Additional Initial Margins.		
5	Liquidity Risk management (continued)	NDC for a member is determined based on its Tier 1 capital, subject to rating based caps. Highest NDC is allotted to the top rated membersand the NDC allotted reduces progressively so that the members rated low are allotted lower NDC. The highest NDC is a function of the committed and collateralised lines of credit available to CCIL	Not applicable	The same approach as is being presently followed in the Forex segment will be followed here. EL will serve as a hard limit after a specified time on S day.
6	Eligible collateral for margins	Base initial margin (which supports Exposure Limit) is required to be in USD cash. All other margins can be met by depositing eligible GOI securities and INR cash	All margins can be met by depositing eligible GOI securities and INR	Members will have to mandatorily deposit USD cash). A part of the margin can be in the form of eligible GOI Securities and INR cash
7	Default Fund	There exists a member contributed default fund specific to this business segment	There exists a member contributed default fund specific to this business segment	There will be a single default fund for this segment
8	Default handling	Since the settlement window is already open, the short timelines do not warrant for an auction of the defaulter's positions. CCIL attempts to settle the positions and in the case of settlement shortage by the defaulter, the payout due to it is withheld back.	On declaration of default, all cleared forward positions of the member are first attempted to be hedged and then the consolidated portfolio (including hedge trades) is auctioned off to the surviving members of the segment.	A rule will be framed that all positions which are "x" days (parameterised) from settlement date will be auctioned off as is presently being done in the forex forwards segment. Settlement shortages may be recorded for positions which go into settlement.