



Risk Management Department

This has been Superseded by Notification No. RMD/FX-FF/20/75 dated 30-Dec-2020 on Default Handling Auction Mechanism

No: RMD/FX-FF/19/44

09th Sep'2019

FOR INFORMATION OF ALL MEMBERS

Forex Forward Segment

Default Handling

1.0 Introduction

1.1 We invite your attention to the Notification No. RMD/FX-FF/09/23, Dated: 19th Nov 2009 wherein the default handling process for Forex Forward segment was notified to members in detail.

1.2 The extant default handling process has now been revised in the light of the amendments in Chapter VI of the Regulations of Forex Forward segment. The revised default handling process is enumerated in the sections below.

2.0 Default Handling Process

2.1 Default Management Committee (DMC)

To assist in the default handling process, a Default Management Committee (DMC) comprising nominated officials of DMC members will be set up for the segment as per para B of Chapter VI of the Regulations of this segment.

2.2 Default handling will involve one or more steps mentioned below (depending upon the defaulter's portfolio, all steps may not be necessary):

1. Declaration of default and initiation of default handling process
2. Risk neutralization of defaulter's portfolio



3. Establishment of a matched book, by one or more of the following default handling tools, viz. Sale, Auction, Allocation, Tear up
4. Loss appropriation
5. Utilization of resources recovered from the defaulter

2.3 Declaration of default and initiation of default handling process

In the event of a default by a member, Clearing Corporation shall initiate the following actions:

- i. Declare the member as a defaulter as per para A of Chapter VI of the Regulations of the segment.
- ii. Stop accepting trades from the defaulter for clearing and settlement or may accept only such trades from the defaulter that reduce the risk of the defaulter's portfolio.
- iii. Remove defaulter's outstanding positions/trades from the set of trades accepted for clearing by Clearing Corporation. As stated in para D(4)(a) of Chapter VI of the Regulations of this segment, such removal of the defaulter's positions / trades will be deemed to have resulted in an unmatched book for Clearing Corporation.
- iv. Convene meeting of the Default Management Committee (DMC) to assist Clearing Corporation in default handling.
- v. Initiate default handling procedures.

2.4 Risk neutralization of defaulter's portfolio in terms of para D(2) of Chapter VI of the Regulations of this segment

Clearing Corporation, in consultation with the DMC, may decide to reduce the market risk of the defaulter's portfolio by executing hedge trades. The hedge transactions will be carried out by DMC official(s) on behalf of Clearing Corporation. Clearing Corporation, in consultation with the DMC, shall determine a "reserve price" for conducting the hedge. Such hedge transactions will be added to the defaulter's portfolio and will be liquidated together¹.

¹ In rest of this notification, "defaulter's portfolio" will mean defaulter's trades along with hedge trades.



2.5 Establishing a matched book

2.5.1 Sale of defaulter's portfolio

In terms of the provisions of para D(4)(b) of Chapter VI of the Regulations of this segment, Clearing Corporation in consultation with the DMC may seek to sell the defaulter's portfolio to non-defaulting members at a price acceptable to Clearing Corporation (agreed to in consultation with DMC) otherwise than by way of an Auction. Such sale may be considered if, in the opinion of the Clearing Corporation, the portfolio of the defaulter is too small to warrant an elaborate auction or for such other reason which in its opinion will help to expedite the restoration of the matched book as elaborated in para D(4) of Chapter VI of the Regulations of this segment. However, if the probable loss on account of such sale exceeds the resources of the defaulter comprising its margins and default fund contributions, such sale shall not be undertaken and the auction process shall be initiated immediately.

2.5.2 Auction

Clearing Corporation, in consultation with the DMC, may decide to sell the defaulter's portfolio in auction to the non-defaulting members who are willing to buy part/ full of the defaulter's portfolio at prices established in such auction.

2.5.2.1 Auction Pool / Bucket

- i. In terms of the provisions of para D(3) of Chapter VI, for the purpose of the auction, the defaulter's portfolio (including the hedge trades as above) may be split in to two or more buckets referred to as auction pools. In case the portfolio is not split, such a portfolio will constitute a single Auction pool / bucket.
- ii. Each "Auction Pool" will be divided into a number of identical auction-able units. Non defaulting members will be required to bid in one or more auction pools specifying *number of units* (cannot be fractional units) and *price per unit*. Members shall be permitted to submit multiple bids.
- iii. Minimum bid size (in terms of number of units) may be specified for the auction.



- iv. Price per unit can be negative (representing payment from Clearing Corporation to auction winner) or positive (representing payment from auction winner to Clearing Corporation).

2.5.2.2 Auction design and Reserve price

- i. A *Single unit auction / Multi-unit discriminatory price* auction will be conducted for each “Auction Pool” as per para D(4)(d) of the Regulations of this segment. In this auction design considerations paid/ received by winning bidders are at prices at which the bidders have won their respective units fully/partially.
- ii. Clearing Corporation, in consultation with the DMC, will determine the reserve price per unit for each auction pool which would be the worst acceptable price to Clearing Corporation for the auction. Such reserve price shall be internal to the Clearing Corporation and shall not be shared with the members of the segment.
- iii. The Clearing Corporation shall prior to each auction advise the members of the segment the timelines, schedule and other pertinent details of the particular auction.

2.5.2.3 Juniorisation

- i. The utilisation of non-defaulter’s default fund contribution (in terms with para I(i)(d) of Chapter VII of Regulations) for loss allocation post the default handling process will be as per the “Juniorisation” scheme as provided for in para D(6) of Chapter VI of the Regulations.
- ii. Clearing Corporation shall compute its expectation, i.e. the number of units a member is expected to win for each Auction Pool, and communicate the same before the commencement of auction. This expectation will be computed for a multi-unit auction based on each member’s average daily gross outstanding positions in the preceding three months to the date of default.



- iii. The Juniorisation scheme is designed so as to rank members as per their auction performance. Juniorisation shall be based on the following two factors viz. member's performance in relation to Clearing Corporation's expectation from the member and Volume weighted average price of the units won by the member in relation to the worst reserve price of such units. At the end of one or two rounds of auction, as the case may be, Clearing Corporation will rank the performance of members as per a Juniorization Factor computed on the basis of the above two factors.
- iv. In case of a single unit auction, Expectations will not be applicable and the winning bidder would be ranked senior to all other members who would all in turn be ranked equally.

An indicative illustration of Juniorisation scheme is placed in *Annexure -1*.

2.5.2.4 First auction

- i. Bids received at prices equal to or better than reserve price will be considered as valid bids.
- ii. Post auction cut off time, all the valid bids will be sorted by their price per unit and will be accepted until the sum of units of such valid bids is greater than or equal to the total number of units in the auction pool.
- iii. The price at which an auction pool will be completely liquidated will be the "*cut off price*" for the pool in the auction. All bids received at prices better than the cut off price will receive full allotment.
- iv. In the event, bid quantity at cut off price is greater than the quantity balance for allotment, such bids at cut off price will receive partial allotment on a pro rata basis.
- v. The resource requirement for auction settlement will be the net sum total of bids receiving full/ partial allotments multiplied by their respective per unit prices quoted by members, along with any risk neutralization losses and any other incidental and consequential losses.
- vi. Depending upon quantum of valid bids received in the auction, Clearing Corporation's prefunded resources and resource requirement for auction settlement, following possibilities are likely:



- a) If valid bids are not received for all the units (for one or more auction pools) in the first auction, Clearing Corporation, in consultation with DMC may decide to have a second auction or allocate residual units to members who won less than their expectation. However in the special case of residual units in buckets with positive mark to market values, such units would either be auctioned or torn-up.
- b) If valid bids are received for all the units (for all auction pools) in the first auction and adequate resources are available (i.e. prefunded resources are greater than or equal to the resources required for auction settlement) it will be possible to honour all the valid bids and thus matched book would be established.
- c) If valid bids are received for all the units (for all auction pools) in the first auction and adequate resources are not available (i.e. prefunded resources are less than the resources required for auction settlement), Assessment call(s) for replenishment of default fund in terms of the provisions of para I (i)(f) and para J(iv) of Chapter VII of the Regulations of this segment will be made to all non-defaulters in proportion to their default fund contributions. In terms of the provisions of para D(5)(d) of Chapter VI of the Regulations of this segment, the members who fail to replenish default fund, will be allocated positions from the auction pool/buckets - to the extent of their defaulted amount by reducing the units allotted to winning bidders in the reverse order of prices. However in the special case of residual units in buckets with positive mark to market values, such units would not be allocated and only torn-up. Allocation of positions may result in increase in the margin obligations of the members to whom such positions are allocated. Members defaulting in their incremental margin obligations on account of allocation will have their positions being subjected to a tear-up by the Clearing Corporation in terms of the provisions of para D (4)(e) of Chapter VI of the Regulations and their resources will be used to compensate, to the extent resources are available, the counterparties whose trades have been torn.



An indicative flowchart for Auction 1 and subsequent steps is shown below:

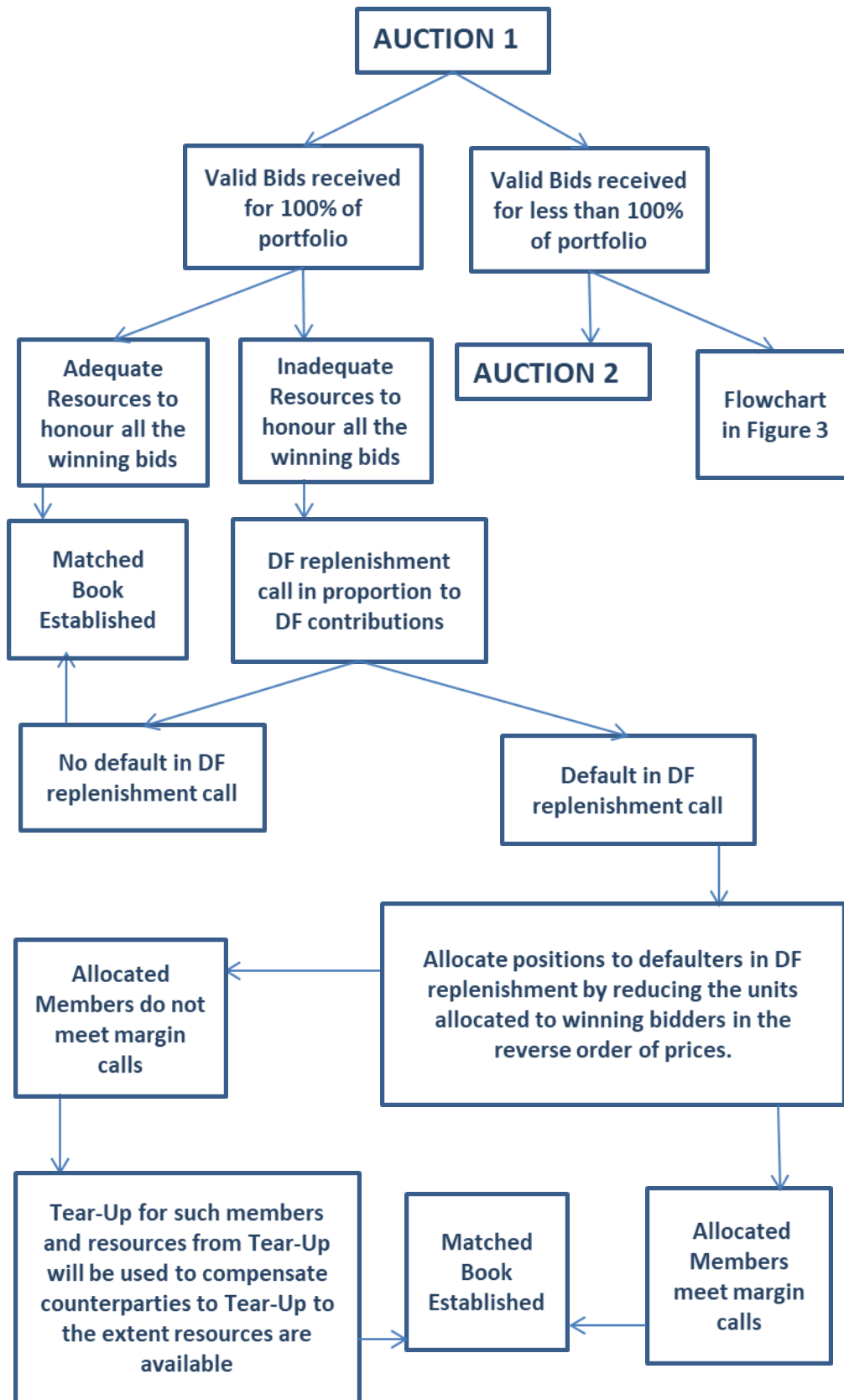


Figure 1: Indicative flowchart for Auction 1 and subsequent processes



2.5.2.5 Second Auction

- i. In case Clearing Corporation doesn't receive valid bids for all the units (for one or more auction pools) in the first auction, Clearing Corporation, in consultation with the DMC may decide to conduct a second auction, with the same or a different reserve price.
- ii. Allotment received in the first round of auction will enable members to assess their actual performance with respect to expected performance and accordingly plan for bidding in the second round of auction.
- iii. The process followed for the Second auction process will be similar to that described in para 2.5.2.4 above for the first auction.
- iv. Clearing Corporation will determine the resource requirement across first and second auction settlements which will be the net sum total of all bids receiving full/ partial allotments multiplied by their respective per unit prices quoted by members, along with any risk neutralization losses and any other incidental and consequential losses.
- v. Depending upon the quantum of valid bids received in the auction, Clearing Corporation's prefunded resources and resource requirement for auction settlement, the following possibilities are likely:
 - a) Valid bids are received for all the units (for all auction pools) remaining unsold after the first auction. There are two possibilities, viz.
 - Prefunded resources are adequate to honour all the winning bids of first and second auctions.
 - Prefunded resources are *not* adequate to honour all the winning bids of first and second auctions: The subsequent steps will be similar to that described in para 2.5.2.4 above for the first auction where assessment calls for default fund replenishment will be made. Default in meeting default fund replenishment will result in allocation of positions to these members by reducing the units allotted to winning bidders across the first and second auction in the reverse order of prices. However in the special case of residual units in buckets with positive mark to market values, such units would not be allocated and only torn-up. If members who are allocated positions do not meet the margin calls, trades of such members will be torn up and their resources will be



used to compensate, to the extent resources are available, the counterparties whose trades have been torn up.

An indicative flowchart for Auction 2 and subsequent steps is shown below:

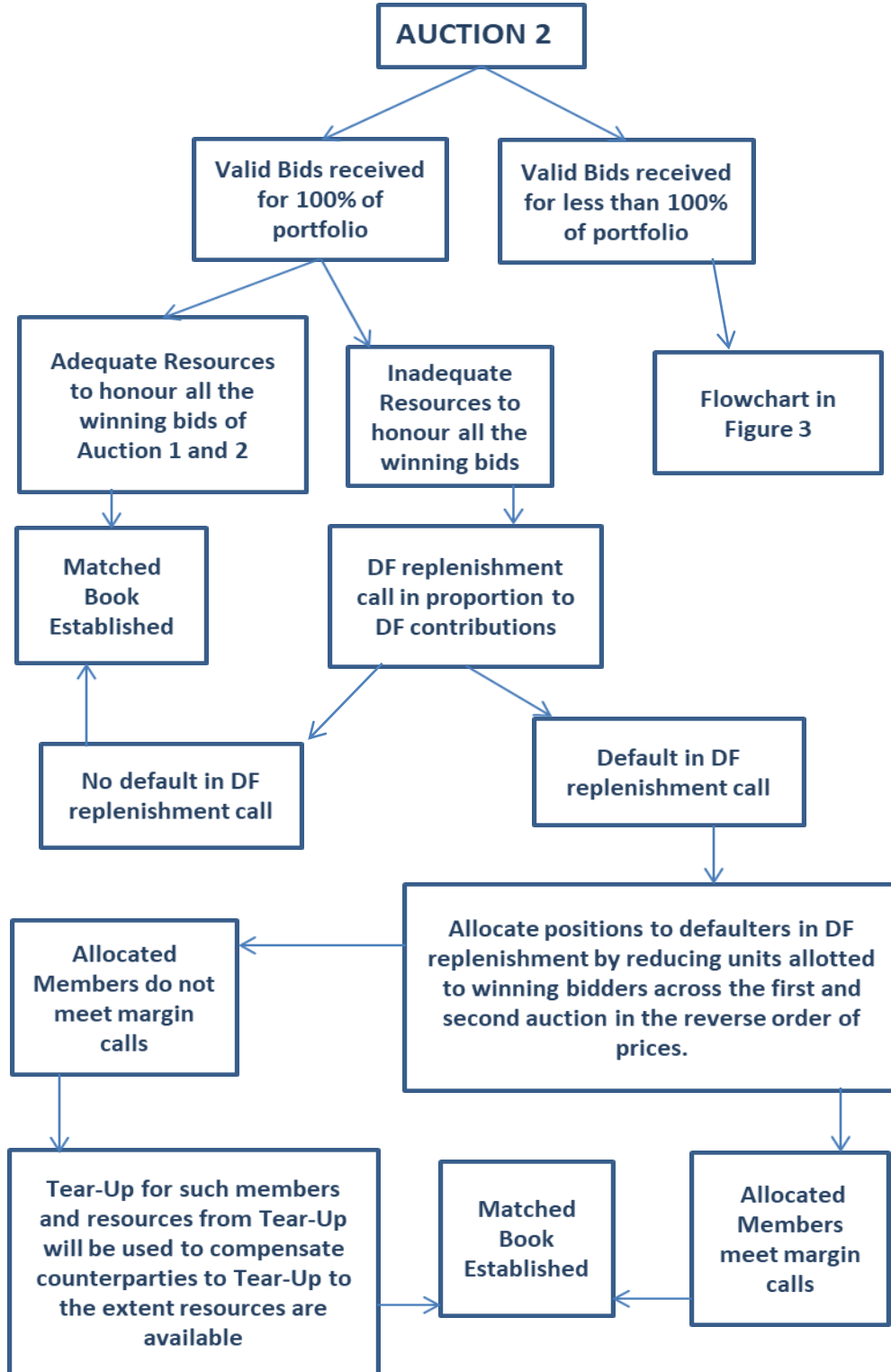


Figure 2: Indicative flowchart for Auction 2 (Valid Bids received for the entire residual portfolio remaining unsold after Auction 1)



- b) Valid bids are not received for all the units (for one or more auction pools) remaining unsold after the first and second auctions. In this scenario, members who did not win as expected will be allocated positions. However in the special case of residual units in buckets with positive mark to market values, such units would not be allocated and only torn-up. Depending upon the available resources and resource requirement for first auction, second auction and allocation, following two possibilities are likely:
- Resources are adequate to honour all the winning bids in first and second auctions and allocation.
 - Resources are not adequate to honour all the winning bids in first and second auctions and allocation, then assessment calls for default fund replenishment will be made to all non-defaulters in proportion to their default fund contributions. Members failing to replenish their default fund will be allocated units from the defaulter's portfolio. Such units will be allocated by reducing units allocated to members who won less than their Expectations and then if required, the units won by winning bidders in reverse order of the prices across first and second auctions. However in the special cases of residual units in buckets with positive mark to market values, such units would not be allocated and only torn-up. If members who are allocated positions do not meet the margin calls, trades of such members will be torn up and their resources will be used to compensate, to the extent resources are available, the counterparties whose trades have been torn.

An indicative flowchart of steps is shown below:

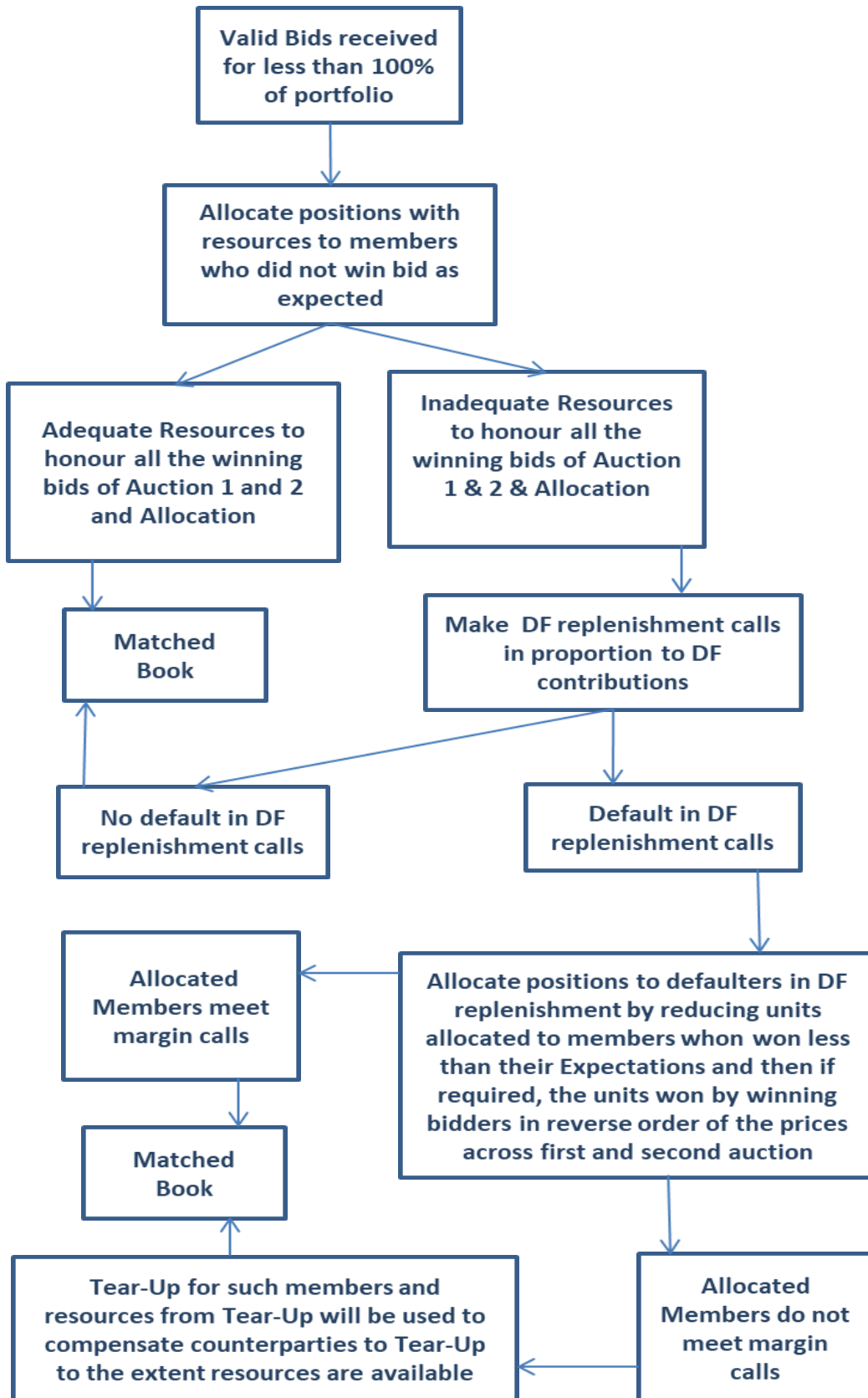


Figure 3: Indicative flowchart post Auction 1 and / or Auction 2 [Valid bids are not received for all the units (for one or more auction pools) in Auction 1 and/ or Auction 2]



2.5.3 Allocation of positions from defaulter's portfolio as per para D(4)(e) of Chapter VI of the Regulations of the segment

Allocation of positions from defaulter's portfolio to non-defaulting members may be required in the following cases:

1. Sufficient valid bids are not received for complete liquidation of one or more auction pools after one or two rounds of auction, and/or
2. There is a shortfall in resources required for auction settlement on account of one or more participants failing to meet their assessment calls.

Allocation may be carried out on two categories of members, viz.

- Members who did not meet their respective expectations after one or two rounds of auction (*category 1*), and/or,
- Members, who did not meet their default fund replenishment calls (*category 2*).

Allocation of units of defaulter's portfolio will be made to *category 2* members, commensurate to their shortfall in meeting default fund replenishment.

The remaining unsold units of defaulter's portfolio will be allocated to *category 1* members pro-rata based on their shortfall in meeting *Expectations*. Maximum allocation made to category 1 member will be to the extent of its *Expectation*. The units shall be allocated to these members at a price determined by Clearing Corporation in consultation with DMC.

2.5.4 Tear up as per para D(4)(e) of Chapter VI of the Regulations of the segment

Tear up entails simultaneously terminating positions in the defaulter's portfolio and equivalent opposite positions of non-defaulting members. Tear up of defaulter's portfolio may be used to establish matched book in the following cases:

1. If there are unsold units of defaulter's portfolio after one or two rounds of auction and Clearing Corporation decides not to allocate units of defaulter's portfolio for establishing matched book and/or,
2. If there is a margin default on account of a member who has been allocated a part of defaulter's portfolio.



In the second case listed above, the portfolio of a member defaulting on account of allocation may also be torn up, either partly or completely, and margins supporting such positions may be utilized to compensate, to the extent resources are available, the members on the opposite side. Partial tear-up may be carried out on a pro-rata basis with the parties having equivalent opposite positions.

The positions being terminated will be at prices deemed fair by Clearing Corporation in consultation with the DMC. However, in case resources are inadequate, payments will be made pro rata to such members to the extent of available resources.

2.5.5 Assessment calls for replenishment of Default Fund made in terms of the provisions of para D(5) of Chapter VI of the Regulations of this segment

Assessment calls for Default fund replenishment in cash shall be made to all the members of the segment to the extent resource requirement exceeds available resources, as determined by Clearing Corporation. Default fund replenishment calls shall be made by Clearing Corporation during the default handling process based on Clearing Corporation's computation of resource requirement. Default fund replenishment calls shall be made to the non-defaulting members in proportion to their respective default fund contributions as per Clause J of Chapter VII of the Regulations of this segment. In the event of a member failing to meet the requirement, Clearing Corporation may initiate appropriate actions against such member which could include allocation of default positions, or tearing up its portfolio, partly or completely, and appropriating the margin resources.

2.5.6 Settlement of Auctions/ Allocation/ Tear up as per para D(7) of Chapter VI of the Regulations of the segment

Members bidding for positions in gain shall be required to make funds available as per their bids before placing the bids. Such funds will remain blocked till completion of auction proceedings. On account of auction, allocation or tear-up, the members could have funds payable or receivable and, margins payable or releasable. After crystallizing the final allotment details (auction allotment/ allocation/ tear-up) of defaulter's portfolio, Clearing



Corporation shall determine the final funds and margin obligations of the members. Members shall also be required to make available requisite margins before receiving funds pay out. In the event of margin shortfall, funds payable to the member by CCIL shall be credited to the member's margin account to the extent of shortfall.

The timelines for settlement of the funds post establishment of matched-book shall be advised by Clearing Corporation to the members.

2.6 Loss Appropriation as per para D(6) of Chapter VI of the Regulations of the segment
Default Handling resources will be split among the auction pools/ buckets in proportion of the total crystallized losses in the buckets and the same would be appropriated as per the provisions of I(i) of Chapter VII of the Regulations of the segment. *Annexure 2* provides an indicative illustration of Loss Appropriation.

2.7 Utilisation of resources recovered from the defaulter in terms of the provisions of para K of Chapter VII (Default Fund) of the Regulations of this segment.

Resources recovered from the defaulter shall be used to make good the losses incurred by the members and Clearing Corporation on account of the default of such participant. Such resources will be utilized as per the provisions of para K of Chapter VII (Default Fund) of the Regulations of this segment.

2.8 The date from which this notification shall come into effect will be advised shortly.

Yours faithfully,

For The Clearing Corporation of India Ltd.

Sd/-

Managing Director



Annexure -1

Indicative Illustration of Juniorization Methodology

1. Assumptions:

- i. There are 7 members P, Q, R, S, T, U and V and there is only one bucket. The number of units each member is expected to win is as shown in the table below.
- ii. The units won by each member in the two auctions and the corresponding Volume weighted average price for the units won are as shown in the table below.
- iii. The Reserve Price per unit for various auction pools in first and second auction is as shown in the table below.

2. Juniorization:

- i. Members are first categorized in two categories viz. Category A and Category B.
 - a) Category A comprises of those members who have equal or more number of units than their expected number of units.
 - b) Category B comprises of those members who have lesser number of units than their expected number of units.
- ii. Category A members will be ranked higher to all Category B members and the two categories are in turn ranked within themselves as per the following Juniorization Factor(JF):
 - a) Category A: $JF = \Delta P \text{ Cumulative} * \text{Excess}$
 - b) Category B: $JF = \Delta P \text{ Cumulative} / |\text{Deficit}|$

Where,

- $\text{Excess/Deficit} = \text{Total units won across the auctions} - \text{Expected Number of units to be won}$
- $\Delta P_{\text{Cumulative}} = \frac{\sum_{i=1}^2 [\text{Volume Weighted Average Price}_i - \text{Min}(\text{Reserve Price}_1, \text{Reserve Price}_2)] \times \text{Units Won}_i}{\sum_{i=1}^2 \text{Units Won}_i}$

Where, i is the auction number

Higher the Juniorization Factor within a category, the more senior the member would be ranked.

- iii. If the Juniorization Factors for two or more number of members are equal, then the members are ranked according to their Excess/Deficit i.e.



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- a) Category A: Higher the Excess, the more senior the member would be ranked.
 b) Category B: Lower the Deficit, the more senior the member would be ranked.
- iv. If there is still a tie after step (iii) above, then the members are ranked according to their ΔP Cumulative. Higher the ΔP Cumulative, the more senior the member would be ranked.
- v. If there is still a tie after step (iv) above, then the concerned members would be ranked equally.

Members	Expected number of Units	Auction 1			Auction 2			Excess/(Deficit)	ΔP Cumulative	Member Category	Category A		Category B	
		RP ₁ * ->	-11.25	ΔP	RP ₂ * ->	-15.19	ΔP				JF***	Rank	JF***	Rank
		Units Won	VWAP**		Units Won	VWAP**					JF***	Rank	JF***	Rank
P	8	10	-6.00	9.19	0	NA	0.00	2	9.1900	A	18.3800	2		
Q	16	16	-7.20	7.99	0	NA	0.00	0	7.9900	A	0.0000	5		
R	64	20	-7.30	7.89	45	-14.00	1.19	1	3.2515	A	3.2515	4		
S	32	10	-6.30	8.89	24	-14.50	0.69	2	3.1018	A	6.2035	3		
T	40	20	-7.10	8.09	10	-12.00	3.19	-10	6.4567	B			0.6457	7
U	0	5	-7.10	8.09	0	NA	0.00	5	8.0900	A	40.4500	1		
V	0	0	NA	0.00	0	NA	0.00	0	0.0000	A	0.0000	6		

RP * =Reserve Price

VWAP ** = Volume Weighted Average Price, i.e. Price weighted by the number of units won at each price

JF *** = Juniorization Factor

$\Delta P = \text{Volume Weighted Average Price}_i - \text{Min}(\text{Reserve Price}_1, \text{Reserve Price}_2)$



Annexure -2

Indicative Illustration of Loss Appropriation methodology

1. Assumptions:

- i. There are four buckets numbered 1, 2, 3 and 4 and seven members named P, Q, R, S, T, U and V.
- ii. The total losses in all the four buckets are as shown in Figure 1(a) below.
- iii. Pre Funded Default Handling resources are shown in Figure 1(b) below.
- iv. DF Contribution of non-defaulting members is shown in Figure 1(c) below.

2. Loss Appropriation:

- i. Level 1 Loss Appropriation i.e. from Defaulter's Resources is shown in Figure 2(a) below.
- ii. Level 2 Loss Appropriation i.e. from Tranche 1 of Clearing Corporation's contribution from the Settlement Reserve Fund earmarked for the segment is shown in Figure 2(b) below.
- iii. Level 3 Loss Appropriation i.e. from Non-Defaulters' Resources is shown in Figure 2(c) below.

3. Balance Resources:

- i. Figure 3(a) show the balance resources at the end of Loss Appropriation.



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Figure 1(a): Losses Tabulation Bucket Wise					
Buckets ->	1	2	3	4	
Total Losses	1200	900	150	50	2300
Proportion of 'Default Handling Resources' distribution	52.17%	39.13%	6.52%	2.17%	

Figure 1(b) Resources Tabulation	
Defaulter's Resources	200
Clearing Corporation's Tranche 1	375
Non Defaulters' Resources	2500
Clearing Corporation's Tranche 2	250
	3325

Figure 1(c): Non Defaulters' DF Contribution	
P	100
Q	200
R	300
S	400
T	500
U	600
V	400
	2500

Figure 2(a): Level 1 Loss Appropriation (Defaulter's Resources)					200
Buckets ->	1	2	3	4	
Losses	1200.00	900.00	150.00	50.00	2300
Resources Available	104.35	78.26	13.04	4.35	
Losses Left	1095.65	821.74	136.96	45.65	2100

Figure 2(b): Level 2 Loss Appropriation (Clearing Corporation's Tranche 1)					375
Buckets ->	1	2	3	4	
Losses	1095.65	821.74	136.96	45.65	2100
Resources Available	195.65	146.74	24.46	8.15	
Losses Left	900.00	675.00	112.50	37.50	1725



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Figure 2(c): Level 3 Loss Appropriation (Non Defaulters' Resources)

Members	Auction rank Matrix Bucket Wise			
	1	2	3	4
P	5	2	5	1
Q	6	5	3	7
R	1	4	1	6
S	2	3	2	3
T	4	7	4	2
U	7	1	7	4
V	3	6	6	5

Members	Resources Available				
	1	2	3	4	
P	52.17	39.13	6.52	2.17	100
Q	104.35	78.26	13.04	4.35	200
R	156.52	117.39	19.57	6.52	300
S	208.70	156.52	26.09	8.70	400
T	260.87	195.65	32.61	10.87	500
U	313.04	234.78	39.13	13.04	600
V	208.70	156.52	26.09	8.70	400
					2500

Losses to Allocate	900.00	675.00	112.50	37.50	1725
Resources Available	1304.35	978.26	163.04	54.35	2500

Ranks	Resources Used Rank Wise			
	1	2	3	4
7	313.04	195.65	39.13	4.35
6	104.35	156.52	26.09	6.52
5	52.17	78.26	6.52	8.70
4	260.87	117.39	32.61	13.04
3	169.57	127.17	8.15	4.89
2	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00

Members	Resources Used Member Wise				
	1	2	3	4	
P	52.17	0.00	6.52	0.00	58.70
Q	104.35	78.26	8.15	4.35	195.11
R	0.00	117.39	0.00	6.52	123.91
S	0.00	127.17	0.00	4.89	132.07
T	260.87	195.65	32.61	0.00	489.13
U	313.04	0.00	39.13	13.04	365.22
V	169.57	156.52	26.09	8.70	360.87
	900.00	675.00	112.50	37.50	1725

Resources Used	900.00	675.00	112.50	37.50	1,725
Losses Left	0.00	0.00	0.00	0.00	0

Figure 3(a): Resources Left

Members	DF Left
P	41.30
Q	4.89
R	176.09
S	267.93
T	10.87
U	234.78
V	39.13
	775
Clearing Corporation's Tranche 2	250
	1025

Total Losses	2300
Resources Available	3325
Resources Left	1025