

## **Discussion Paper : Risk Management – Safer Markets for Investors**

The core of risk management for any clearing corporation (CC) is collaterals (minimum of 50% in cash/cash equivalents including fixed deposits) deposited by the stockbroker or TCM with the CC. Participants bring risk to the system by way of trades which the CC is obligated to settle with guarantee and the CC in turn tries to mitigate this risk by collateralization. The present system in India, as it has evolved, still has various unaddressed risks and there is scope to take further steps to mitigate them.

### **Risk Management System in Indian Stock Exchanges**

The risk management system in case of Indian stock exchanges is based on two pillars. While margins calculated on open positions and collateral deposited against it forms the first line of defence, deposit based capital (base minimum capital, liquid networth) given by trading member (TM)/clearing member (CM) becomes the second line of defence against failure of any market participant.

As against net positions serving as the basis for levying margins on brokers for positions taken by them and their clients as implemented in other jurisdictions, in India VaR (Value at Risk) based margins are imposed at a client level i.e. net for a client and gross across all clients for the broker, thereby ignoring any netting-off that may occur between client-client and client-proprietary positions. VaR based margins are updated 5 times per day to keep the margin requirements in sync with the current level of market volatility. In addition to VaR based initial margins there are additional requirements specified, as a second level of defence, in the form of an exposure margin/extreme loss margins which provides extra cushion in case of tail risk events and finally mark-to-market losses are collected and paid in cash on a daily basis.

Indian stock exchanges have a deposit based capital requirement over and above entry level and continuing networth criteria for market participants undertaking the trading/clearing activity. Such net worth requirements vary based on the nature of the business activity, trading or clearing or both, of the participant. Further in addition to the minimum capital requirements, Stock Exchanges/Clearing Corporations have been empowered to collect additional deposits in order to satisfy itself on the parameter of credit risk. This is as against a balance sheet based capital adequacy requirement prevalent in many other jurisdictions. In Europe, market participants are subject to European Union Capital Adequacy Directive (an equivalent of the Basel Accord), while jurisdictions like the U.S and Canada practice a capital adequacy regime which is based on the liquidity or net capital requirement -an approach requiring securities firms to maintain minimum levels of highly liquid assets to adequately satisfy all their obligations and provide a cushion against potential losses arising from general risks.

Further, the extant system of risk management could be fine tuned for more efficient use of capital and enhancing safety of investors. The paper highlights four such steps that can be considered:

- A. Incentivising Internet Based Trading models posing minimal risk
- B. Mitigation of risk to client collateral
- C. T+1 settlement as a measure to reduce overall risk in the system

While it is true in general that trades pose risk to the CC which is mitigated by way of margins levied against which collateral is collected, the risk posed by trades of various categories of clients varies across categories of clients. An example of this is the category of internet based trading (IBT) clients in the cash segment where the funds or securities of clients are upfront blocked at the time of order itself thereby posing no further settlement risk to the CC. The margining framework that has evolved for mitigation of risk to CC has given rise to another risk, the risk of clients losing their collateral in the event of default/bankruptcy of the broker or TCM, and accordingly there is a need to take steps to mitigate this.

Further, the overall risk in the system is dependent on the number of unsettled trades in the system at any point of time. A shorter settlement cycle can go a long way in reducing the risk in the system.

Each of these issues is further discussed below with questions formulated to elicit responses from the reader.

### **A. Internet Based Trading model**

The risk management practice followed for non-leveraged products like those in equity cash segment, by some brokers offering Internet Based Trading (IBT) facility to their clients leads to such trades posing minimal risk to CC. Typically, such brokers are financial institutions that operate as bank, broker and Depository Participant. The framework followed involves checking for availability of and blocking either 100% cash in the connected bank account in case of buy orders or shares in the connected demat account in case of sell orders. Thus, risk posed by trades of such clients to the broker is zero as there is an order level check for availability of funds/securities as well as blocking of the same on execution of the trades. However, broker is still required to post margin to CC for such trades as the funds or securities are with the broker and not the CC. Thus CC is still exposed to risk of default by the broker till the time pay-in has been made to CC. Even if the broker does an early pay-in of securities/funds, the margin freed up by such early pay-in is returned back by the CC after a lag of time and not as soon as the early pay-in has been made (though fresh positions can be taken on margin freed up). Also at times the brokers hesitate in making the early pay-in during the day till the end of trading to

ascertain if actual pay-in is required to be made to the CC as the final obligations to CC are computed on a net basis across obligations of all clients and proprietary positions.

Since the funds and securities of clients in IBT model are blocked in segregated accounts of clients, an arrangement for such zero risk trades with the CC may lead to potential lower costs. This will require that the CC has immediate visibility of the funds or securities blocked for pay-in as well as legal certainty of lien over such blocked funds or securities or that it will without fail be tendered at the time of pay-in. Further, as the model involves client assets kept in segregated bank or demat account, the model also accords greater protection of client assets. Such a system may provide enormous benefit to such clients that are not doing day trading and only investment activity both in terms of lower trading costs and high safety towards their assets.

Since this trade model brings no additional risk to the system, there is a case to incentivize more and more investors to use this model so as to reduce the overall risk in the system. Some of the incentives in this regard can be as follows:

- i. Waiver of any margin requirements by the CC for such trade model as the funds/securities are already blocked on behalf of CC.
- ii. CC to release any blocked margin for IBT trades as soon as the early pay-in is made.
- iii. As IBT trades bring no risk to the system, such trades may be charged lower clearing charges by the CC.

The savings due to such incentives may then be passed on to the end clients in the form of lower brokerage charges or deposit charges thereby incentivizing investors to use the IBT model. It is understood that in certain jurisdictions IBT has facilitated the spread of investment culture among retail investors.

#### **Issues for discussion**

1. *What arrangement can be put in place by designated large financial institutions in coordination with CC to ensure legal certainty that funds/securities blocked by broker are without fail made available to CC at the time of pay-in?*
2. *Which of the above/combination of the above three incentives would be most effective in incentivising IBT mode in equity cash segment?*
3. *Are there any other suggestions in this regard?*
4. *Any other incentive mechanism for the same?*

## **B. Mitigation of risk to client collateral**

While Brokers/TMCMs participate in securities market for their business, clients access securities market to invest their savings. The risk that clients face in securities market is the price risk/market risk of the securities they invest in. Market structure should be sound enough not to expose clients to other risks (operational risk, credit risk of broker/TM). Changes to this effect will go a long way in further instilling confidence among the investors in the securities market framework and facilitate greater market penetration. One such risk incidental to participating in the securities market is the risk to client collateral, and needs to be mitigated.

### **Extant SEBI guidelines for client collateral protection**

SEBI has mandated segregation of client money's/securities, deposited as collateral with broker/TMCM, who are required to ensure that client collateral is not used for any purposes other than meeting the respective client's margin requirements/pay-ins while maintaining records to ensure proper audit trail of client collateral. Further, broker/TMCMs are required to issue a daily statement of collateral utilization to clients for their transactions in cash and derivative segments and report to Exchange/CC, the margins collected for client trades in derivatives segments.

### **Recent events**

The debacles of **MF Global** and **Peregrine** have caused investors to lose their confidence in the present regulatory framework and regulatory bodies all over the world are considering various alternatives to safeguard client's money effectively.

In this regard, the recently notified CPSS-IOSCO Principles for Financial Market Infrastructures (FMIs) cast the responsibility on CC to "effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant" by having segregation and portability arrangements. The following has been inter-alia recommended by CPSS-IOSCO:

*A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.*

### **Collateral framework**

In the derivatives segments, for any client trade, client is mandated to give collateral, under the pain of penalty, to its broker/TMCM who in turn gives collateral to CC. This is in contrast to the

cash segment where no such stipulation exists upon the client. Despite the daily certification provided by CM to the CC that collateral placed against margin of each client has been collected from the client, the system of acknowledging the same by the CC does not exist. CCs in India do not recognize clients/client collateral and obtain an undertaking from broker/TMCM that the collateral provided by them even for client trades belongs to the broker/TMCM. Thus, for a client trade, broker/TMCM can either:

- a) give separate collateral to CC and back-to-back keep the client collateral with itself. It is found that several brokers follow a good practice of keeping client collateral in segregated accounts; or,
- b) can pass on the collateral received from client to CC as own (broker's/TMCM's) collateral after authorization from the client in this regard.

While alternative (a) is sub-optimal in terms of costs due to maintaining twice the collateral as required (both at broker/TMCM end and at CC end), alternative (b) does not protect interests of client due to the possibility that its collateral can be utilised by CC on default of the Broker/TMCM even when the client has fulfilled his obligation. Even in alternative (a), in view of the fact that the collateral deposited by the client is with the broker/TMCM and not with the CC, protection of client's money is not accorded any priority within the Exchange/CC system and client only has normal legal recourse to get back its collateral. The framework appears biased against clients in that while the interests of Broker/TMCM and CC are protected within the CC framework, client may have to take recourse outside the CC framework to protect its interests which would also be at a higher cost and time delay.

The issue of client collateral protection appears to be in a trade-off with capital efficiency as seen in the alternatives (a) and (b) above. This trade-off may be due to the interpretation that client securities (one part of client collateral) placed with the broker through a pledge in the Depository system cannot be reassigned to the CC thereby forcing clients to transfer securities to the demat account of the broker for onward transmission to CC, which leaves the legal ownership of the client over its securities tenuous and unprotected.

### **Proposed models**

#### **Model A (with client collateral at an arm's length distance from broker/TM)**

CCs to provide a facility wherein clients can deposit collateral with designated Professional Clearing Members (PCMs) (PCMs are those Clearing Members who do not have trading rights) which can be utilised only on account of specific clients' obligations. In case of broker/TM/PCM default, the positions and collateral of the non-defaulting clients are amenable to be ported to another broker/TM/PCM.

### Structure

- PCM to keep client collateral in segregated accounts.
- Broker/TM of the client to have information of the client collateral kept with PCM.
- CC/PCM to allocate limit to the broker/TM against collateral deposited by client with PCM to be utilised towards positions of the specific client. Broker/TM to ensure that the positions of clients allowed by it are commensurate with the collateral deposited by the client with the PCM.
- The responsibility to fulfill all obligations arising out of client trades (margins and pay-in obligations) to rest with broker/TM and finally with PCM.
- Collaterals deposited by clients availing such facility shall be utilized towards the margin/pay-in requirements of the specific client only and will be readily made available to broker/TM by the PCM in case of non-performance of obligations (default/shortfall) by the client.
- At the time of non-performance of broker/TM of its obligations, CC to port positions of non-defaulting clients of such broker/TM to another broker/TM under the PCM. In case of non-performance of PCM of its obligations, CC shall utilise the margins backing positions of non-defaulting clients to another PCM. In case of close-out of any positions by CC, the margins will be returned by CC to the respective clients after adjusting with the loss/gain due to close-out, if any.

### Features

- Portability: In case of default by a Broker/TM, since client collateral is segregated at PCM end, client positions can be easily ported to another Broker/TM who will then have to risk manage the ported client's positions as per the available collateral. In case of PCM default, porting of positions and corresponding margins by CC can be done.
- Practicality:
  - This model seems to be suitable for big clients with large positions/collateral.
  - Limitation of reach may make it difficult for clients to post monies/securities directly with PCM.
  - This model will also entail additional costs of maintaining segregated accounts at PCM end.

### **Model B (with CC enshrining margins backing client trades as client margins in value terms)**

CC to recognize collateral against margin as deposited by Broker/TM/CM with CC on account of each individual client's positions as client collateral. CC shall not utilise the collateral deposited with it on any client account for fulfilling the dues which a CM may owe to the CC in respect of trades of the member on its own account or on account of trades of any other client of the member. Further, in case of CM default, collateral deposited by the defaulting member on account of any client's trades will be available to be used by the CC only when the specific client

is in default. This proposed practice is immediately possible in the derivative segment wherein the collection of collateral against margin is explicitly acknowledged as having been collected from each individual client. Such one-to-one correspondence may be offered by CCs in the cash segment too for similar arrangements wherein a certification is provided by the CM to the CC. The IBT mode, as discussed earlier, is devoid of such risks and is amenable to a zero margin regime.

#### Structure

- Broker/TMCM to collect collateral from clients.
- Broker/TMCM to pay margin for client as well as proprietary trades to CC.
- In India, a CC has real time data of client level positions on PAN basis and of the required margin for each client on a broker-client code basis that is mapped to the PAN.
- CC to keep collateral provided for proprietary trades and collateral provided for each client's trades segregated from each other, either physically or operationally, say legally segregated operationally commingled (LSOC).
- On Broker/TMCM default, CC to use only collateral provided against margins for proprietary trades by Broker/TMCM. Further, Broker/TMCM is responsible to inform CC within a stipulated time to identify and inform CC the client(s) who are in default, if any, after which CC may use collateral against margins corresponding to trades of clients in default too.
- Positions and related margin of non-defaulting clients in case of Broker/TMCM default to be ported to another Broker/TMCM so as to enable non-defaulting clients to continue keeping their positions and the related collateral. In such a case, non-defaulting client will need normal legal recourse only for the purpose of getting their excess collateral from the defaulting Broker/TMCM.

#### Features

- Portability: In case of default by a Broker/TMCM, since positions and corresponding margin is recognized client wise at CC end, positions and margins of client is amenable to porting by CC to another Broker/TMCM.
- Practicality: Since the model does not require any significant change in account structures, it is more practical and can be implemented for all clients that have an arrangement of giving collateral against margin to the broker before/upon the trade. It will separate such clients from those that have funding arrangements with a broker and therefore bear the risk of getting clubbed along with the proprietary positions of the broker upon a situation of default.
- Costs: The incremental costs involved in implementing the model might be less as compared to the incremental benefits of the model (the model would be able to accord protection of client margins for millions of clients within the CC framework).

**Issues for discussion**

5. *Since rules for segregation of client collateral, usage of client monies by broker/TMCM, and arbitration/legal recourse in case of improper usage and loss to client are already in place, is there need to take further steps for protection of client collateral?*
6. *The proposed models try to protect client from credit risk of broker/TMCM. Wouldn't this be akin to allowing client to participate in the market without taking any risks?*
7. *While model A accords protection to entire collateral of client, model B only protects margin of client backing client positions. However, model B is easier to implement than model A. Which model should be implemented – model A, model B, both or none?*
8. *Currently, client collateral is recognized only at broker/TM level and not at CM/PCM/CC level. In case of any attachment order by any authority (courts/other bodies) of client assets, this lack of client level recognition of assets at PCM/CC level protects the assets at PCM/CC level thereby limiting any hindrance to settlement process. However, with the proposed models requiring recognition of client assets at PCM/CC level, would this pose risk to the settlement process at CC? If yes, what could be the possible solutions to allay this risk?*

**Model A specific**

9. *While the model protects interests of client on broker/TM default, it should not be at the cost of ignoring broker/TM interests on client default. Thus, the model should ensure both -(i) that client collateral is protected in case client has fulfilled its obligations and (ii) that client collateral is definitely available to broker/TM in case of non-performance of obligations by client. How should PCM determine the event of non-performance of obligation by client – (i) take broker/TM's word as true (ii) Take client's confirmation too (iii) Cast responsibility on TM/broker to prove client non-performance (iv) Cast responsibility on client to prove performance of obligation within a specified time failing which collateral will be released?*
10. *Currently, in case of dispute, since the client collateral is with broker/TM, the broker/TM uses that to fulfill any obligation towards CC on account of client trades pending decision on dispute. In case decision of dispute goes in favour of client, TM/broker settles client claim. Thus, regardless of which party was at fault, the cost till decision of litigation is borne by the client. In case in the proposed model, PCM does not release collateral to broker/TM pending dispute, broker/TM will have to use own assets to fulfill obligation towards CC on account of client trades. It will be fair not to release collateral even to client in case of dispute, thereby affecting both the parties equally. Will this be unfair to broker/TM?*



**Issues for discussion**

11. *Should the pay-in/pay-out to client be done through the broker/TM or directly through PCM? While a direct pay-in/pay-out through PCM would obviate the need for PCM to depend on TM for information on client non-performance in most cases, however, there may be practical limitations to achieve this in terms of reach to end client for daily pay-in/pay-out.*
12. *Should it be made mandatory for all TMs to tie-up with a designated PCM for providing this service to its desiring clients or should clients desiring such facility be asked to trade through TMs of designated PCMs providing this service?*

**Model B specific**

13. *Though positions and margins are segregated at CC end to enable portability to another Broker/TMCM, however, this new entity must have contractual relationship with the ported client so as to enable it to risk manage the ported positions as well as to undertake obligations from ported client. Such interim or transition period may require an empanelled group of broker/TMCMs to temporarily risk manage positions of such clients with certain conditions?*
14. *Whether it is feasible to legally enshrine that margin posted for client trades by Broker/TMCM can be used by CC only in case of concerned client default and be ported along with client positions, even though the ownership title of the collateral, when in securities form, is not clear and that the ability of broker to reassign these to CC in the first instance is itself in doubt. The legality of providing benefit of collateral related to client positions to the client, irrespective of collateral being that of broker/TMCM or client is a related question.*
15. *Currently, in the event of a default/shortfall, the CC has available to it all the collateral deposited by the concerned member to fulfill its settlement guarantee obligation regardless of whether it was to cover client positions or proprietary positions of the member. Will such a model restricting CC from using collaterals backing client trades to fulfill its settlement guarantee obligation lead to unsettling the soundness of the CC/greater systemic risk?*

**C. T+1 settlement**

The financial crisis of 2008 has brought into focus the risks prevalent in the system, the magnitude of which also relates to the length of the settlement cycle. A shortened settlement

cycle not only reduces that but also reduces and frees up the capital required to collateralize that risk. Some of the arguments for a shortened settlement cycle are as follows:

- The value (and thus the risk) by which a position can diverge from the original contract terms is proportional to the time to settlement. A 2 day VaR is 1.414 times a 1 day VaR.
- A shortened settlement cycle of T+1 also reduces the number of outstanding unsettled trades at any instant of time and thus decreases the unsettled exposure to CC by 50%.
- Narrower the settlement cycle, narrower is the time window for a counterparty insolvency/bankruptcy to impact the settlement of a trade.
- The capital blocked in the system to cover the risk of trades will get proportionately reduced with the number of outstanding unsettled trades at any point of time.
- Systemic risk depends on the number of outstanding trades and concentration of risk at critical institutions as CCPs and becomes critical when this magnitude of outstanding transactions increases. Thus, in this era of increasing trade volumes, a shortened settlement cycle will help in reducing systemic risk.
- A by-product of the risk management system in the securities market is the credit risk that end clients take on their market intermediaries which depends on the amount of collateral deposited by them with the market intermediaries. A shortened settlement cycle reduces the amount of collateral and thereby the resulting risk.
- Saving in operational costs as many processes move from manual to automation mode.

#### Issues for discussion

16. *Since retail clients make use of payment by cheque, is implementation of T+1 feasible?*
17. *Will the cost of modifications of existing trading and settlement systems for increased automation and efficiency be lesser than the benefits envisaged by the move?*
18. *How will time-zone issues for foreign investors and cost of standardizing communications of institutional trades be handled?*

The comments / suggestions on this paper may be emailed to [feedback-drmnp@sebi.gov.in](mailto:feedback-drmnp@sebi.gov.in) or may be sent to the following address, latest by May 20, 2013:

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