

Central Counter-Party as a Vehicle for Efficient Risk Management in the Derivatives Market

1. Background: Changing Financial Market

- 1.1 Change is the only constant, said somebody. If one has to look for a live example of this, the financial services sector perhaps will stand out. From the days of 3-6-3 banking where the bankers used to get funds from the customers at 3%, lend at 6% and go home happily by 3 O'clock, the banking business has transformed itself drastically. Today, the banking is truly a 24x7 activity. Financial Services sector has also almost come from nowhere and now occupies a very prominent place in the financial sector. The variety of services performed by these entities today is simply mind boggling.
- 1.2 Not only that the complexion of the business has changed, the way business is done has also changed radically. In the olden days, most of the banks and financial services businesses were owned by individuals or small group of individuals who were known to each other. The customers doing business with them also knew them reasonably well and/or had implicit trust in them. Risk of failure of these business causing loss to the customers were not so much in the focus. Even then, the reputation and perceived credit standings, however, used to play a big role in one's ability to be in banking business.
- 1.3 Days however did not remain so simple. In the endeavour to grow bigger and even bigger, everybody started pushing the boundary. The financial service providers started expanding their geographical reach, adding more and more products to attract more customers. The customers, on the other hand, started expanding their scales of business and started demanding more and more sophisticated services to support their businesses. This change caused two principal shift in the business relationship between the financial sector and its customers: the entities providing financial services started becoming impersonal (mostly through corporatisation) and because of the varying nature of the requirements of the customers, customers also started accessing multiple providers of financial services. Volume of business also started growing rapidly. Cost of potential failures grew to higher levels and in some cases, reached a magnitude where the loss from a failure could be crippling to the business. As a natural consequence, trust developed through relationships could no longer serve as a basis for attracting business.
- 1.4 With these changes came in specialisation in various types of financial activities. Mutual Funds, Pension Funds and Insurance companies came in. All of these entities have investment of funds of their customers as one of their core activities, albeit with slightly different perspective. Hedge funds, on the other hands, allow investments/positions taking in various markets to exploit market imperfections for earning more than normal returns. Specialisation is evident now in almost all other financial services as well,

- 1.5 These developments have since brought risk return objectives in clear focus. It is also understood clearly that unless risk is taken, no return can be expected. Financial market participants are usually clear about their core areas of business and about the risks they want to carry. They accept the risks they are willing and competent to carry and shed the remaining risks to the market. Treasury has become the most effective vehicle for such risk transfer. Services of the Treasury is also being used to assume additional risks at appropriate prices when found profitable.

2. Analysis of Treasury Activities :

- 2.1 Even till about a decade back, the treasury of a bank was more of a liquidity management outfit which used to ensure that adequate liquidity is available to the bank at all times. Raising resources in a cost effective manner to fund the bank's business and deploying surplus in a profitable manner was its main role. With the increase in competition and increased specialisation in all aspects of financial services business, the face of the treasury has however changed beyond recognition. While resource management has remained as one of its core functions, its principal role now is as the bank's interface with the outside world for risk transfer and risk assumption.
- 2.2 Treasuries are now engaged more in managing risk positions through trades in the market. Movement of various market rates, actual or perceived, normally drive the trades. Many a time, positions are altered multiple times within the maturity of a transaction. The transactions carried out by the Treasury with the outside world, either on its own account or for hedging purposes create counter-party exposures. In case of hedging, the value of the counter-party exposure assumed through the hedge trade is actually equal to the market risk shed through the deal (as any failure of counter-party will cause a loss equal to the market risk shed). For the reason explained above, increased treasury activities, most of the times result in corresponding increase in counter-party exposures.
- 2.3 The increase in treasury activity is however usually legitimate. It enhances the efficiency of the treasury function and helps it to achieve higher returns. Thus, for efficient and profitable running of treasury, such creation of counter-party exposures will have to be taken as normal and options are required to be explored for its most efficient management from both risk as well as capital deployment angle.

3. Why are Derivatives becoming popular:

- 3.1 In the changed market scenario, active management of risk positions are becoming the order of the day. As against the olden days when treasuries used to take positions in assets, instruments and securities, positions are now being taken in various types of risks like US dollar short term interests, Rupee- US dollar currency exchange rates etc. and to achieve such objective, various instruments are being used as the means.

- 3.2 Taking positions by going through the cash market or by dealing in assets were never efficient. It used to create much larger counter-party exposures in many cases. Such structures therefore could not last and over a period of time, led to the creation of products which allowed similar results without actually dealing in the assets. A classic example of this is Forex Forward market. Cover for a forward purchase of a currency was possible through borrowing of home currency, using the funds for upfront exchange of home currency into foreign currency and then lending in the foreign currency till the maturity date. This structure however would have created unduly high counter-party exposures due to borrowing and lending. The market therefore found the solution in dealing in only forward premium whereby no transaction in underlying Rupee or US Dollar funds was necessary. Forward contract is a derivative product and actually represents the interest rate differential between the two currencies. In the similar manner, derivative contracts have usually been found to be more efficient vehicle for risk transfer.
- 3.3 The derivatives market has also been found to be very useful by the market participants to take position in a market without any position in the underlying e.g. a credit exposure on a corporate can be created by buying a Credit Default Swap on payment of periodic premium instead of investing in the bond issued by the company or by lending funds to the company.
- 3.3 The derivative transactions are generally cash settled for the difference. This ensures that the counter-party default risk on a derivative transaction is usually low. In appreciation of this aspect, exposure control processes usually allow for much higher exposure on account of derivatives. Even for derivatives trades settled in exchanges, margins are usually low. Therefore, higher leverage is possible in the derivatives market.
- 3.4 Another consequence of lower counter-party risk is the ability to attract more players in the derivatives market. This brings in increased liquidity which in turn encourages market players to accumulate larger positions without getting unduly worried about market illiquidity.
- 3.5 The efficiency of the derivatives market in allowing market participants to trade or hedge is of such superior order as compared to the market for the underlying and as the derivatives market allow many different types of structuring which are not possible in any other market, the derivative markets are expected to continue to grow rapidly surpassing many times of the size of the underlying asset markets.

4. Are derivatives really so risky?:

- 4.1 It is clear from the above that financial derivatives are extremely useful instruments and these are essential for efficient functioning of the financial markets. The possibility of high leverage however create possibilities of misuse. Moreover, as the existence of positions in any underlying instrument is not necessary for getting into a derivative transaction, keeping track of the transactions in the derivatives market requires more effective control systems.

4.2 There has been some well publicised disasters in the derivatives market like the cases of Proctor & Gamble, Bearings etc. In all these cases, lack of control has generally been observed as the major causes of failure. Going by these experiences, it is clear that the risk control for derivatives business should be one of the major focus area for orderly growth of the financial market. Moreover, the size of this market is also growing at a very fast pace (about 30 to 50% annual growth is being seen in most of the markets) and risk control for this segment can therefore pose much larger challenge than is evident on the surface.

5. Where are the risks?:

5.1 It is clear that the critical areas for derivatives risk management should adequately cover the under-noted risks:

- (a) *Counter-party credit exposures*: Because of the huge expansion in the size of the market, increased liquidity and the eagerness of the market to concentrate trading on the desired risk positions, the number of outstanding trades in the derivatives market have increased significantly. As a result, the counterparty exposures of the market entities have increased sharply. This level of increased exposure is already a cause of serious concern to the market participants and regulators. Moreover, the impact of any counter-party failure could result in significant disruption in the functioning of the market causing systemic risk. Due to the bloated balance-sheet, even capital requirements to support such trades are increasing rapidly.
- (b) *Transaction Processing* : complexities of the derivative products require efficient mid-office processing for risk control and back-office processing for generation of trade confirmation, tracking of the outstanding trades, recording re-set of rates and effecting settlements. In the context of phenomenal growth in the derivatives market and due to general non-availability of efficient derivatives trade recording software, most of the market participants are finding it extremely difficult to efficiently carry out mid-office and back-office processing of the derivatives transactions. These are raising operational risk levels substantially and if the position is allowed to continue, this problem alone can come in the way of further growth of the derivatives market.
- (c) *Valuation of positions on a Regular basis with clear focus on profitability* : Another major difficulty being faced by the market participants are in the area of proper valuation of outstanding derivative contracts so that the profitability or otherwise from the derivatives trading can be properly and reliably assessed. As most of the trades in derivatives market are Over The Counter (OTC) trades, flow of information regarding prices at which trades happen between the market participants are not known to others in the market. This lack of information about the market prices causes serious difficulty to the market participants in arriving at the profitability of their derivative positions.
- (d) *Transparent information about market size, rates, market players*: As most of the derivative trades happen on an OTC basis, market players do not get any

information in regard to the rates prevailing in the market. Moreover, the volume of the trades entered into in various derivative products are also not available to the market participants and regulators. No information is also available in regard to the players in the derivatives market. Due to the absence of these information, depth of the market is not ascertainable either by the market participants or by other users who may like to use this market for hedging purposes. This lack of transparency has been found to be one of the major drawbacks of the OTC market and many of the market participants are not comfortable in taking increased exposure in this market.

- (e) *Ensuring Systemic Stability* : As the trades in the derivatives market happen mostly on an OTC basis, the accumulation of positions or losses by a market entity is not known to others. Moreover, there is no process of collection of margins for accumulated losses. Hence, any failure by a market participant can destabilise the market and in an extreme case, create a systemic crises.

6. Role of Central Counter Party(CCP):

- 6.1 As explained above, the derivative transactions have been found to be ideal both for trading as well as hedging. Market participants adore it for its versatility and flexibility, as well as for its ability to offer it for use for creating structured products. As a result, the volume in the derivatives market is about to be going through the roof. As the market efficiency needs to be encouraged, the growth of this market cannot be controlled or curtailed. On the other hand, if the risks arising out of the market are not tackled appropriately, it is most likely that the failures in the derivatives market could actually destabilise the market.
- 6.2 Central Counter-party (CCP) is a relatively new concept which has appeared only in the recent period. CCPs are entities which become counter-party to the trades between the market participants, buyer to a seller and seller to a buyer. It provides guaranteed settlement to both the buyer and the seller of the trade for which it becomes CCP. CCPs collect margins from both buyers and sellers and use the margin to meet any shortfall in case of any default by either the seller or the buyer. In India, The Clearing Corporation of India Ltd. (CCIL) is one such instance of a very successful CCP. CCIL offers guaranteed settlement of trades to its members in Inter-bank trades in Govt. Securities, Rupee-US Dollar and CBLO. It is also readying itself for guaranteed settlement of trades in Rupee Interest Rate Swaps and Rupee-US Dollar Forward trades.
- 6.3 The settlement through a CCP is a very interesting proposition. Settlements happen at a netted level. Even at the pre-settlement stage, the liability of the settlement system participants to the system remains at netted level. Netting, by itself has been found to be of great assistance in reducing counter-party exposures. Multilateral netting has been observed to cause counter-party risk reduction to the extent of 90 to 95% in most of the markets. This level of risk reduction through netting supplemented by margin deposits generally enables CCPs to almost take care of the entire risk for the derivatives transactions that it may settle. CCPs also provide certain other services like providing details of

trades on a continuous basis, providing details for valuations etc., which makes market healthy and transparent.

7. CCP as risk management vehicle

7.1 Risk reduction potential of CCPs may now be examined in slightly greater detail.

- (a) *Counter-party risk exposure:* As discussed above, settlement of trades through CCPs cause risk reduction to the extent of 90 to 95%. Moreover, the remaining exposures are also taken care of by the CCP through its margining processes. Thus, the biggest hurdle with derivatives market in the form of bloated counter-party exposures can actually be taken care of by a CCP for the products settled by it, in an almost complete manner.
- (b) *Transaction Processing:* Another big source of risk for the market participants in the derivatives market is their inability to process the trade transactions in an adequate manner. As the CCP would have complete details of the trades of the settlement participants, it is relatively easy to develop a structure for the settlement participants to draw particulars of its trades in the manner it likes. The value of this is enormous for the market participants and they could save huge cost and also take care of operational risks in respect of the products settled by the CCPs. Even for the products for which the CCP is not in a position to offer guaranteed settlement, CCP can offer matching and settlement services to enable its settlement members to get the benefits in respect of transaction processing and of operational risk containment.
- (c) *Valuation of positions on a Regular basis with clear focus on profitability :* As the trades of the settlement participants pass through the CCP, CCP is usually in a position to provide the best possible valuation of the outstanding trades of its settlement participants. As the CCP will have its own valuation methodology for its margining purposes and such valuation methodology should be based on consensus of the settlement participants, there could perhaps be no better valuation possible for the outstanding trades of its settlement members.

CCPs can even run trading system on anonymous basis to assist the market participants to carry out their trades in the most efficient manner.

CCPs can also become calculation agent for trades of the market participants.

- (d) *Transparent information about market size, rates, market players:* CCPs would also be in a position to have complete information of the trades in the market which are settled through its system. CCPs can judiciously share this information with the market, thus taking care of the biggest problem of lack of transparency generally associated with the OTC market. If this is possible, even Regulators would be able to regulate the market in a much more effective manner.

(e) *Ensuring Systemic Stability* : A CCP is expected to have well designed margining system to take care of any default by any of its settlement participants. It is also expected to have its own resources to take care of extreme events. Hence the possibility of any default leading to systemic crisis is most improbable in respect of the type of trades a CCP settles.

8. Conclusion: The market has already realized that they cannot leave without derivatives. Regulators are also slowly coming around the same view. It is perhaps the right time that the role of CCP in offering secure derivatives market is analysed in proper perspective and necessary steps taken to encourage more CCPs to come into this area.

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