

# The Clearing Corporation of India

R. H. Patil

As the economy of a country develops, its financial markets expand and get diversified. New and innovative products get introduced and new market players having diverse interests and outlooks join in large numbers to widen and deepen the financial markets. Growth in the volume of transactions in financial markets is invariably accompanied by an increase in the complexity of operations. For protecting integrity of rapidly growing financial markets a sound institutional structure to support and facilitate the clearing and settlement of financial transactions becomes essential.

Recognising the need for upgrading the country's financial infrastructure in respect of Clearing and Settlement of debt instruments and forex transactions, Reserve Bank of India initiated the move to set up The Clearing Corporation of India Ltd. (CCIL). The country's largest bank, State Bank of India, took the lead in setting up of the CCIL. The other core promoters of CCIL are LIC, IDBI, ICICI Bank, HDFC Bank, and Bank of Baroda. Subsequently, CCIL invited all the important commercial banks and primary dealers to take up shareholding so that CCIL truly becomes a venture of the major players in the Indian financial system. CCIL was incorporated on the April 30, 2001. It commenced its operations on February 15, 2002 along with the commencement of operations of RBI's Negotiated Dealing System (NDS).

CCIL is the country's first clearing house for Government Securities, Repos, Forex and other related market segments. The primary objective

in setting up CCIL has been to provide a safe institutional structure for the clearing and settlement of trades in the Government Securities, Forex (FX), Money and Debt Markets, to significantly improve efficiency in the transaction settlement process, and insulate the financial system from shocks emanating from the counterparty risks and market deficiencies of various types that currently plague the Indian financial markets. Operations at the CCIL currently encompass settlement of trades in Government securities, Treasury bills and Repos concluded and/or reported on NDS. CCIL extended the facility of guaranteed settlement of trade to its members with effect from April 10, 2002.

The facility of centralized clearing and settlement offered by CCIL is a great advantage to the players in this market. Moreover, CCIL's assurance that trades entrusted to it will get settled on the settlement day has been providing the much-needed comfort to the market. For participants in the forex market, CCIL's intermediation provides a structure to mitigate, and manage risks associated with settlement of these high-value transactions. Since the foreign currency leg has necessarily to be settled overseas while the rupee leg gets settled locally, time-zone differences come into the picture adding to the settlement risk. Besides bringing tangible benefits in the form of improved efficiency and easier reconciliation of accounts with their correspondent banks, CCIL's intermediation in the settlement process will lead to lower transaction costs to the participating banks, institutions, and primary dealers.

**Important Milestones**

- Date of Incorporation: 30<sup>th</sup> April, 2001
- Date of Commencement of Securities Settlement: 10<sup>th</sup> February, 2002
- Commencement of Guaranteed Settlement: 10<sup>th</sup> April, 2002
- Settlement of Forex Trades: Early November 2002
- Launching of CBLO: Mid–November 2002

**Expected Events**

- Launching of Forex Trading Platform: Before the end of 2003

## 1 Risks and Their Mitigation

Since one of the major contributions of CCIL to market development will be risk mitigation for its members it is worthwhile to discuss the aspect of market risks that members normally face. As a settlement organisation, CCIL is uniquely placed in the market in the sense that most of its members are banks, financial institutions, and mutual funds which are all closely regulated entities and hence relatively less risky entities to deal with. Further, CCIL will not be facing the usual risks that most of the clearing corporations face when they rely on one of the banks through which the settlement transactions are routed. Since RBI, the central bank of the country itself acts as the clearing bank for the transactions handled by CCIL, it does face the usual “settlement bank risk” which most of the clearing entities face when they have to rely on the commercial banks however strong they may be.

The second advantage CCIL enjoys is that most of its members are banks which maintain sizeable unencumbered balances with RBI in the form of the cash reserve ratio (CRR) balances. Hence CCIL would rarely face problem of funds default from its member banks in respect of their transactions in securities or the foreign exchange. When CCIL admits corporates and NBFCs as its members at a later stage, it will stipulate a condition that they will have to choose one of the member banks as its clearing agent be fully responsible for all the risks posed by the entities whose trades it will be handling as a clearing member of CCIL.

The major risks that CCIL faces as the central clearing agency guaranteeing settlement are: Credit risk, Liquidity risk and Operational risk. Credit risks are of two types: Principal risk and pre-settlement (or replacement) risk. Principal risk gets crystallized when one of the parties to settlement fails and is unable to meet its full obligations under the contract on the settlement date. Pre-settlement or replacement risk is the risk of loss resulting from replacement costs that may have to be incurred by CCIL as the clearing entity in case one of the counter-parties to settlement becomes insolvent *before* settlement.

Foreign exchange contracts are a good example to explain these risks. Let us say, a party enters into a contract with another party for purchase of US dollars, but the counter-party fails in the pre-settlement period itself. The former will then have to enter into a contract with another party

for purchase of the dollar amount. The party will then have to book a notional loss on account of the adverse movement, if any, in the rupee-dollar exchange rate between the day it had first contracted for purchase of US dollars and the day it replaces that contract with the second counter-party.

Liquidity risk refers to a party's inability to make payment (or deliver security) to its counter-party on account of shortage of funds (or securities), and as far as the counter-party is concerned, it is as good as a credit failure. The risk can, however, be managed much better if settlement is done through a settlement agency that has suitable mechanisms, such as a standby line of credit and/or a security borrowing/lending arrangement, in place. This is where the framework of settlement through CCIL will help.

Operational risk refers to risk arising from deficiencies in systems and/or management control, or due to human failure. Again, a centralized settlement system can tackle operational risk much better than individual players can.

For settling trades in both the government securities and the inter-bank forex spot/forward transactions, CCIL employs the mechanism of multilateral netting and novation, becoming the central counter-party to both the contracting entities, and guaranteeing settlement of trade on the settlement date. For meeting the challenges posed by technical or other defaults and completing settlement on time, CCIL makes use of a settlement guarantee fund (SGF) composed of different types of collaterals contributed by its members. Members are also required to provide additional collateral by way of margins as and when there are variations in prices of government securities etc., or foreign exchange rates. By employing a system of multilateral netting, CCIL ensures that, regardless of the number of trades/transactions entered into by a member on any given day, there is only one net funds obligation, either payable or receivable, that is needed to be put through the member's account.

Since CCIL becomes the central counterparty for all trades/transactions members of CCIL do not have to worry about the risks they face while dealing with any other market player as soon as their trades/transactions are accepted by CCIL for settlement. Once the members are freed from the worries of counterparty risks each of them is able to devise its own optimum trading and portfolio strategy and maximise returns. The most important role that the CCIL thus plays through its settlement guarantee mechanism is to upgrade the credit rating of all its members' irrespective of their own/inherent credit rating.

Market players will attach high value to the settlement guarantee of CCIL only if it is able to generate high level of confidence in its ability to contain settlement risks by easily absorbing any possible loss that weak members will inflict on the resources at the command of CCIL. The skill and efficiency of CCIL therefore lies in its competence to quantify with a high degree of accuracy the risks involved in accepting member's trades/transactions for guaranteed settlement. Once CCIL is able to quantify risks that it will have to shoulder in different market situations, it should price this risk to each member by way of its contribution to settlement guarantee fund. CCIL would have to impose exposure limits on a real time basis on each member depending on the contribution that the member makes towards the settlement guarantee fund and pays margins and other charges that CCIL demands from time to time. CCIL will have to charge margins of different types to protect itself against the possible loss it may incur when market situation/prices change.

## 2 Clearing and Settlement of Securities

Presently banks, financial institutions, primary dealers and mutual funds who are allowed to trade on, or participate in, the RBI's Negotiated Dealing System (NDS) platform can become members of CCIL for Government Securities Settlement. CCIL accepts both outright and repo trades in government securities for settlement. Outright trades involve one-time settlement of securities and funds.

Repo trades involve an immediate sale/purchase of securities, followed by a re-purchase/re-sale of the same securities in the same quantity at a future date, with the repo rate being decided on the trade date itself.

RBI has developed the Negotiated Dealing System (NDS) platform for Screen-based trading in Government Securities and Money Market instruments. Members are connected to RBI through the INFINET network, a secure closed user group (CUG) hybrid network (consisting of both VSAT and leased lines) developed by RBI exclusively for use by the Indian banks and financial institutions. Trading among members, and reporting of trades to the RBI, happens on-line and in real time.

After trades are concluded/reported on the NDS, details thereof are sent to CCIL by RBI-PDO for processing and settlement, in two batches. The first batch consists of trades with settlement on  $T+0$  day. The second batch

consists of trades with settlement on  $T + 1$  and beyond. The cut off timings for the batches are 14.30 hrs for batch **I** and 17.30 hrs for batch **II**. However, depending on the exigencies and requirements of market participants, the cut off timings are extended by RBI.

CCIL's system computes the margin requirement on the trades and compares the same against available margin of the concerned members in his Settlement Guarantee Fund (SGF), a fund maintained by CCIL comprising of member's contribution (partly in cash and partly in acceptable securities) as per policy laid down by CCIL in this behalf. This process of checking adequacy of margin is known as "exposure check." For trades where margin requirement are met, CCIL generates member-wise report of "Trades Accepted for Guaranteed Settlement."

In case of insufficiency of margins for a member, a "Trades Exceeding the Exposure Limit" report is generated for the member. Such trades are eligible for guaranteed settlement upon putting up the necessary additional margin by the concerned members. Presently, CCIL follows the DVP-II method of settlement, where securities are settled on a gross basis, i.e. trade by trade, and funds are netted, member-wise. Current RBI stipulations do not permit short selling of securities. Hence as per RBI's requirements CCIL has adopted DVP-II mode of settlement for securities.

Both the securities as well as funds settlement takes place through the settlement accounts of CCIL maintained at RBI. The settlement process is complete in case no shortage in securities and funds is encountered. In case of funds shortage, CCIL completes settlement by utilizing the cash component of the Settlement Guarantee Fund or/and the Line(s) of credit available to CCIL from banks. The securities deliverable to the defaulting member is withheld. The funds utilized to meet the shortage are replenished on the next day by the defaulting member, to secure the release of withheld securities.

The current size of the settlement guarantee fund is around Rs.1300 crores of which the cash component is around Rs.225 crores. CCIL has arrangements with major five commercial banks for lines of credit. CCIL has already entered into agreement for credit lines for Rs.400 crores. For the balance amount of Rs.400 crores documentation is in progress with the concerned banks. The experience so far indicates that the lines of credit obtained from the banks would be highly comfortable since on very rare occasions the institutional players are ever short on cash.

In case of securities shortage, CCIL arranges to complete settlement by transferring the security/securities concerned, either from the Settlement Guarantee Fund SGL account or from its own Proprietary SGL account. CCIL has also entered into an arrangement with LIC and SBI whereby it can borrow securities from them for completing the settlement in case of delivery shortages. Since both these institutions are very large holders of almost the whole range of government securities it should not at all be difficult for CCIL to complete the settlement whenever it faces delivery shortages in respect of government securities. The funds/securities payable/deliverable to the defaulting member is withheld. The securities utilized in completing settlement are replenished by the defaulting member on the next day, to secure the release of withheld securities/funds. The defaulting member is required to pay a penalty and bear all the costs incurred by CCIL in connection with the default.

## 2.1 Risk Management Tools

CCIL has in place a comprehensive risk management system in place in respect of the government securities segment which has gone live recently. It has also devised a similarly tight risk management system for the forex segment that is expected to become operational in the immediate future. The risk management system comprises strict admission norms for membership, measures for risk mitigation in the form of robust margining process, setting up of exposure limits, settlement guarantee fund (SGF), liquidity arrangements, continuous position monitoring and loss allocation procedure (in respect of the forex clearing where the market is still not ready for a DVP type of settlement mechanism) and penalties in the case of default and/or violation of settlement rules.

## 2.2 Margins for Securities Segment

CCIL charges two types of margins for the securities segment. They are the initial margin and the mark-to-market (MTM) margin. Initial margin is collected to cover against the likely risk from future adverse price movements of the concerned security and is computed trade-wise by multiplying the total value of consideration for the trade with the applicable margin factor for each security calculated with the help of a value at risk model (VAR). Off-set for the initial margin is allowed only in the case of counter trade in

the same security with the same settlement date. In other words the initial margin is calculated on the basis of net exposure in the concerned security vis-à-vis the CCIL. The margin factor (VAR) is normally computed using historical simulation method and it covers risk over a 3-day holding period at 99 percent confidence level on past 1000 days zero coupon yield curve (ZCYC) based on the Nelson & Siegel equation. Since CCIL allows a day's period for replenishment by a defaulter members in case of pay-in default a 3-day holding period is used for calculating the level of initial margin.

Members are encouraged to maintain sufficient balances in their contribution to settlement guarantee fund (SGF) to cover both initial margin and the mark-to-market margin requirement at any point of time. With a view to keeping opportunity costs of contributions to SGF low, CCIL has given an option to members of paying 90 percent of the required contribution to the SGF meant for securities segment in the form of liquid GoI securities. To protect itself from the erosion in the value of the collateral contributes by the members to the SGF meant for securities segment CCIL revalues the collateral at regular short intervals to reflect price changes in securities and applies a suitable hair-cut to the value thus obtained.

Mark-to-market (MTM) margin is collected to cover notional loss that may have been incurred by the member (i.e. the difference between the MTM price and the contract price of a trade). It is computed on the basis of movement in market prices in the case of outstanding position of the members in all forward leg of the repo and outright transaction to be settled beyond  $T + 1^{th}$  day in case of securities transaction. In the case of a buyer, MTM margin would be payable if the MTM price is lower than the trade price. Similarly, in the case of a seller, MTM margin would be payable in case the MTM price is higher than the trade price.

CCIL computes MTM price of a security based on the weighted average price (WAP) of the last five outright transactions<sup>1</sup> reported on the RBI's NDS. In case no deals are reported, the previously available WAP is used unless this WAP is more than 6-days old. In all other cases, model prices are computed using ZCYC.

CCIL is in the process of finding a reasonably satisfactory solution to the problem that illiquid stocks pose in its risk management strategy. The

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<sup>1</sup>If there were less than 5 trades, prices of all trades are used in the weighted average price calculation.

present margining system is based on the assumption that CCIL would be able to square off positions within a day. But this assumption does not hold good in particular in respect of stocks that are relatively illiquid. There are a number of GOI stocks which are not very liquid and less frequently traded. Most of the state government stocks are highly illiquid. Prices at which deals in such illiquid stocks can be squared off may be far away from the price calculated by the current procedure adopted in CCIL. One possible solution would be to attach a variable illiquidity premium for such illiquid stocks depending on the level of their perceived illiquidity and charge higher initial margin to cover the potential risks of CCIL.

Apart from the inherent problem of illiquidity of several stocks, there is also the problem of strange behaviour of some of the market players often trading in stocks at prices which are at considerable variance with the going market prices. This strange behaviour is noticed often in respect of trading in stocks that are relatively liquid or not so much illiquid. It is likely that this behaviour may be partly due to the current imperfections of the market which is not transparent and transaction details are not disclosed on near real-time basis to the market. There is no strict regulatory compulsion to report trades on the NDS soon after they are concluded through the brokers. NDS is currently used only to report trades and not for actual negotiation of trades on the NDS screen itself. This state of affairs is also indicative of the strong hold that the broker community on the market. Broker community is particularly not in favour of real time transparency of all the deals in securities in regard to the deal quantities and their respective prices.

### 3 Clearing And Settlement of Forex

Membership to the forex segment of CCIL is currently restricted to the Authorized Dealers (ADs) in Foreign Exchange. Both Spot and Forward forex transactions will be covered. Initially, CCIL will settle spot and forward inter-bank US Dollar-INR forex trades which account for approximately 85 percent of the total inter-bank forex trades concluded in the country. Since the RBI's INFINET network forms the communication back bone for our operations, connectivity to the network will be a pre-requisite for members availing of CCIL's services. Members will be provided with the software necessary for linking up their existing back-office systems at the designated offices with CCIL's systems. The settlement process involves

mandatory transfer of deal confirmation files, over INFINET, by the members to CCIL, in format IFN 300.

Once the structured financial messaging system of RBI's INFINET system becomes operational, such trades will get reported by members direct over this network. Further, CCIL also intends to launch its own trading platform for inter-bank forex transactions shortly. Trades concluded over the trading platform will form a direct input to CCIL's settlement systems and no separate confirmation need be sent by the banks for such trades. No settlement (of US\$/INR forex transactions) will take place on Saturdays, Sundays and such other days as are not business days in either Mumbai or New York. There will be at least one settlement per business day of Mumbai.

As in the case of government securities clearing and settlement, the original contracts for buying and selling foreign exchange, entered into between the parties concerned, will be novated and replaced by a new one, for the same value date, between CCIL and each of them. The deal confirmation data currently exchanged among members will be validated and matched at CCIL and processed for exposure check. Each member is assigned a "Net Debit Cap" (NDC) which is the maximum exposure to be taken by CCIL on such member (in terms of US\$ sold by the member for a particular value date). CCIL will not normally accept any deal which violates the member's NDC/Exposure limit for settlement, unless such excess is fully pre-funded. All deals which thus the exposure check are netted. While the rupee funds will be settled through the members' current accounts with RBI, the US\$ funds will be settled through CCIL's account maintained with the Settlement Bank at New York.

### 3.1 Default in Payment of US\$ Obligation

A member with a net payable position is said to have defaulted when it fails to credit part or the whole payable amount (in US\$) to CCIL's account maintained with the Settlement Agent before the stipulated cut-off time on the value date. In such a case, CCIL will complete the US\$ leg of the settlement by drawing under the dollar line of credit facility from the Settlement Bank. The settlement bank has extended credit lines to the tune of US\$ 275 million, which is expected to be more than adequate for the purpose. The settlement guarantee fund of CCIL would be around

US\$ 120 million. The defaulting bank's rupee account with RBI will be debited next morning with the amount paid into it by CCIL (CCIL would be appropriately pre-authorized by every member for posting a debit into the member's account in such an eventuality), in connection with settlement of trades, the previous day.

If the defaulting member repays the US\$ amount to CCIL before expiry of the deadline (12.00 noon IST) on the business day after the day of the default, the default will stand cured and the debit raised in the member's current account with RBI will be reversed. However, if the default is not cured by the deadline set by CCIL, then CCIL will utilize the INR funds, withdrawn earlier by debiting the member's current account with RBI, to purchase US\$ in order to pay off the Line of Credit (LOC) outstanding, incurred earlier for completing settlement. In case adequate INR funds are not available in the current account of the defaulting member, the loss allocation procedure will be invoked. The cost of recovering the shortfall in US\$, including exchange loss if any, along with out-of-pocket expenses and handling charges, will be recovered from the defaulting member. A penalty will also be levied on the defaulting member on the outstanding amount, from the day of the default till all obligations arising out of such default is extinguished.

### 3.2 Default on INR Obligation

If a member defaults on its INR obligation, CCIL will withhold the dollar funds payable to the member. CCIL will, however, complete the Rupee settlement by availing of the line of credit facility. Subsequently, if the defaulting member repays its obligation before expiry of the deadline set by CCIL, the default will stand cured. However, if it fails to do so and the default continues beyond the deadline (12.00 p.m. IST on the business day after the day of the default), the US\$ funds payable to the defaulting member and withheld by CCIL will be converted into rupees in order to extinguish its outstanding obligation. In case of shortfall, the loss allocation procedure will be invoked. As in the case of the US\$ default, a penalty calculated on the outstanding amount from the day of default till extinguishment of all obligations, as well as the cost of funding the INR shortfall, exchange loss, if incurred, and out-of-pocket expenses and handling charges, if any, will be recovered from the defaulting member.

### 3.3 Loss Allocation Procedure

It is worth noting the basic difference in the modes of settlement of the securities transactions from that of the rupee-dollar settlement handled by CCIL. In the case of securities settlement, CCIL adopts the DVP method whereby securities are not transferred in the buyer unless the buyer has paid for the securities fully. However, in the case of rupee-dollar settlement, CCIL has to fall in line with the current market practice whereby rupees are first paid in India to the net sellers of US\$ and these sellers deliver the US\$ to CCIL in its account with the settlement banker viz., ABN Amro's New York office subsequently. In case there is a default in the delivery of US\$ by a seller, CCIL will have to first recover the rupees already paid to the defaulting member and use the rupee proceeds to buy US percent so as to reimburse ABN Amro Bank to the extent of the credit lines used.

If CCIL incurs expenditure in excess of the rupees recovered from the defaulting member in the whole process it will have to absorb this loss. Secondly, if CCIL does not succeed in recovering the rupee proceeds from the defaulting member it will have to invoke the loss allocation procedure. Thus the rupee-dollar settlement procedure being adopted is more risky involving credit risk mainly because the market players are still not willing to adopt DVP-like method which is also commonly referred to as Payment-Versus-Payment (PVP) method.

As per the procedure devised by CCIL, in case default remains outstanding for more than one business day, the loss allocation procedure will get automatically invoked. In such a case, the settlement loss will be first met out of the defaulting member's contribution to the SGF. If the collateral contributed by the member is insufficient for this purpose, the amount of shortfall will be apportioned to the surviving members in proportion to their exposure to the defaulting member on the value date.

### 3.4 Risk Management

The risk management mechanism for forex segment includes tools for managing credit risk by way of membership norms, member-wise NDCs. The tools for managing liquidity risks include both fully collateralised lines of credit as also non-collateralised lines of credit from the settlement bank. Based on certain performance parameters, CCIL will fix suitable net exposure limits or NDC for all its members. NDC is calculated as the maximum

exposure, in terms of net payable amount, that CCIL will take on a member by accepting its trades for settlement.

### 3.5 Collateral Requirements

For mitigating CCIL's risk, members are required to contribute collateral to the SGF in accordance with the policy laid down by CCIL from time to time. Currently the contribution amount is a factor of the member's NDC. A member's margin factor is arrived at on the basis of its credit rating as determined by an independent rating agency, and the volatility factor in respect of US\$ – INR exchange rate. The contribution to SGF of CCIL's forex segment is payable in US\$ funds. CCIL will invest the corpus in US Government Securities and deposits, and distribute earnings arising out of such investments (excluding revaluation gains/loss, net of costs/taxes if any, on the basis of each member's average daily cash balances to the members at half-yearly rests). The SGF corpus is used to collateralise the lines of credit availed by CCIL to facilitate settlement.

CCIL has made necessary arrangements for availing of lines of credit from its overseas Settlement Bank, as also banks in India, in order to ensure that settlement of both the forex and the INR legs of the transactions, goes through even if a member(s) fail to deliver its/their currency obligation to CCIL on the value date.

## 4 Future Plans

CCIL will constantly endeavour to assess market needs and come out with products to satisfy the same. The Corporation will also strive to contribute its bit to facilitate a deepening of the secondary debt market, particularly the repo market in government securities. New services to be launched in future will touch the forex (including settlement of the inter-bank US\$/INR Cash/TOM deals), derivatives and money markets and will include development of a dealing platform for forex and collateralised borrowing and lending obligation (CBLO) deals. CCIL would gradually extend its geographical coverage to other parts of the country. CCIL is also planning to introduce clearing and settlement facilities in Interest Rates Swaps (IRS).

#### 4.1 Collateralised Borrowing & Lending

CCIL has developed a new money market product called “Collateralised Borrowing and Lending Obligation” (CBLO), to meet the needs of banks, financial institutions, primary dealers, mutual funds, NBFCs and corporates for borrowing and lending of funds. CBLO is a new type of *derivative instrument* that incorporates the basic features of the standard tripartite repo, the call/notice money market, and tradable securitised debt instrument of short maturity. In the standard tripartite repo instrument the borrower deposits the repo-able securities with a third party like bank or a clearing corporation that is acceptable to the lender of funds. When funds are lent to the borrower the third party holding custody of repoable securities acts as a trustee and guarantees the return of funds from the borrower to the lender. In case the borrower does return borrowed funds on the due date the third party holding custody of securities sells them in the market and repays the funds to lender.

In all repo transactions, including the tripartite repo deals both the lender and the borrower are obliged to unwind the deal only on the due date. Assume the repo is for a period of say, 15 days; even though the borrower’s liquidity position improves before the stipulated 15<sup>th</sup> day borrower cannot unwind the repo either in part or the whole of the transaction. In such situations the borrower has no choice other than entering into a fresh repo transactions to lend the surplus funds. In the same way the lender of funds is has also no flexibility of getting his funds back either in part or the whole of it until the maturity date of the repo deal. If the lender of the funds needs liquidity he will also have to enter into a repo to borrow funds for the balance maturity. Thus both the lender and the borrower do not have enough flexibility in the case of a repo transaction.

To resolve this problem satisfactorily both for the borrowers and lenders of funds, CCIL has designed the tradable CBLO instrument to lend liquidity to the tripartite repo instrument. CCIL proposes to provide a dealing platform through which market participants will borrow and lend funds by trading in the CBLO instruments of various maturities which will be issued at discount to their face values. CBLOs will be denominated in multiples of Rs.5 million so that there is a facility to unwind lending/borrowing positions in part at attractive prices depending on the market situation.

Since holders of CBLO (or lenders of funds) have the freedom to exit the market at their choice they may be willing to bear the risk of buying CBLOs with longer maturities. Over a period of time it should be possible for the borrowers of funds to float CBLOs with maturities up to 90 days or more. In the early phase CCIL proposes to encourage the market to float CBLOs with maturities up to 90 days. Thus CBLO instrument will help in developing an active term money market.

Since both the borrowers and lenders of funds are afraid to take position on interest rates for different durations the Indian market has failed to develop an active term money market. Currently, the National Stock Exchange (NSE) has been publishing its MIBID/MIBOR for various durations up to 90 days. These rates are based on a polling method and not on the willingness of the market players to lend/borrow even modest amount of funds at the rates indicated by them in the polls. Hence NSE's MIBID/MIBOR rates for different durations have failed to develop confidence in the market players to actually lend/borrow funds at these rates. Today market participants consider that these rates are as purely indicative in nature. Despite the availability of MIBID/MIBOR for periods up to 90 days for about two years the market has not witnessed a term money market at which funds are actually lent on even a modest scale. The main reason is that market does not consider these rates as not being dependable for entering into actual transactions but more speculative/indicative in nature. But once CBLOs of varying maturities start getting traded actively the market in CBLOs would effectively help in the discovery of bid/offer rates for different maturities. This will help in the development of a real term money market.

#### 4.1.1 What is a CBLO?

An obligation by the borrower to return the money borrowed at a specified future date; an authority to the lender to receive money lent at a specified future date with an option/privilege to transfer the authority to another person for value received; An underlying charge on securities held in custody (with CCIL) for the amount borrowed/lent.

#### 4.1.2 Eligibility

The membership of CBLO segment will be initially extended to NDS members. The membership will be subsequently extended to non-NDS

members like NBFCs and Corporates once the internet platform that CCIL is developing gets ready. The CCIL internet platform will help in expanding the geographical reach of the market to all those cities where internet connectivity is available. All the NDS and non-NDS borrowing members will be required to open their Constituent SGL (CSGL) Accounts with CCIL to lodge securities which can be used by them as collateral for borrowing.

#### 4.1.3 Borrowing Limits

Borrowing limits for the members will be fixed at the beginning of the day taking into account the securities deposited in the constituent SGL (CSGL) account. The securities will be subjected to necessary haircut after marking them to market. The limits in effect will denote the drawing power up to which members can borrow funds. Lenders will deposit cash to meet initial margin requirements that are designed to take care of the settlement risks. Since the borrowing limits of the borrowers are based on the value of sovereign securities held in CCIL's custody through its CSGL account the tradable CBLO is essentially a derivative instrument that can be freely traded on the screen to be provided by CCIL.

#### 4.1.4 Creation and Issue of CBLO

Members will have the flexibility to access the auction market and also normal market for borrowing funds based on the borrowing limits fixed by CCIL. The CBLOs could be offered on an outright basis and also for varying periods maturing on the reporting Fridays not exceeding 90 days. The members desirous of borrowing from the auction market will be required to indicate their borrowing requirements clearly mentioning the amount, maturity date of CBLO and the range for the rates before commencement of the trading session of the day. The range could be specified by the borrower one of the following:

- (a) with cap at MIBOR.
- (b) with a cap at MIBOR+50 bps.
- (c) with a cap at MIBOR-50 bps.
- (d) without any cap.

CCIL will convey its acceptance of the request to the respective members and place their offer on the auction screen. In the case of borrowing through normal market, members can directly place their offers for borrowing on the normal market screen, subject to availability of eligible borrowing limit.

#### 4.1.5 Auction Market

Based on the borrower's requirement, CCIL will place the offer indicating the amount and maturity date of borrowing on the auction screen. The lenders will submit their bids for the amount to be lent and the yield expected. The lenders will have flexibility to modify/cancel their bids during the auction process. However, borrowers will not be permitted to revise the amounts or the terms of their offers during the auction period. The auction matching will be initiated based on uniform yield method which will be applicable to all the borrowers and lenders. Auction session will be kept open between 9.45 am to 11.30 am every day. The CBLOs allotted to the lenders in the auction market will be available for trading in the normal market from the subsequent day onwards.

#### 4.1.6 Normal Market

The normal market is available to the members for borrowing funds and also for trading in CBLOs. The members can simultaneously borrow in the auction and normal market to the extent of the limit allocated initially by CCIL based on their request for each market. In case the members are not successful in meeting their borrowing requirements in the auction market, they can access the normal market to the extent of their available borrowing limit for which CBLOs have already been created for respective maturities and made available in the members account. Besides, the members can use the normal market for trading in the CBLOs which they had acquired by lending in the auction market or normal market. In effect, the normal market provides a facility to offload the CBLOs in their possession to meet requirement of funds.

In the normal market operations, members willing to lend or borrow funds can do so by placing their buy/sell orders for CBLOs on the screen. The members willing to sell CBLO will place their offers indicating the CBLO of relevant maturity for matching with the best bids for the same

CBLO. Like-wise members willing to buy CBLOs will submit their bids which will match with the best offer on the screen. The matching of bids and offers will be on the basis of Best Yield – Time Priority. Normal market trading session will be kept open between 9.30 a.m. and 3.30 p.m. every day.

#### 4.1.7 Clearing and Settlement

After the trading session, all the matched deals in both the auction and normal markets will be taken up for processing and settlement. The settlement will be on  $T + 0$  basis. The CBLO obligation is generated by netting trades in the same CBLO for the normal market and the obligation for CBLOs for the auction market is worked out on gross basis. The funds obligation for each member will be netted across all the matched deals of the concerned member in the auction and normal markets. Funds pay-in and pay-out files will be generated by the CCIL system and will be sent electronically to RBI for effecting debits and credits in the members' current accounts through the settlement account of CCIL with RBI.

CCIL will have the mandate from its members for posting debit and credit entries into their current accounts with RBI. After effecting funds transfer between members' current accounts, the RBI will be sending back settlement confirmation file electronically to CCIL. After receiving confirmation of funds settlement from RBI, CCIL will effect CBLO pay-out to respective buyer member's account.

#### 4.1.8 Risk Management

CCIL will address risk relating to trading and settlement by adopting strict membership norms and restricting the membership only to those entities that meet the minimum eligibility criteria. Members will be allowed to borrow to the extent of the limit fixed on the basis of the securities deposited after necessary valuation and haircut. The securities in the CSGL account will be subjected to daily valuation and any deficit in the value of the securities vis-à-vis the face value of CBLO will be collected from the concerned members. Besides, CCIL will stipulate initial margin for the lenders in the auction market and for each bid and offer in the normal market to address the interest rate risk, in case the lenders do not honour their commitments and CCIL has to step in as guarantor. CCIL has also framed procedures for handling shortfall in funds and in CBLOs.

## 4.2 Forex Dealing Platform

CCIL is proposing to launch a Forex Dealing platform to meet the requirements of the Inter Bank Foreign exchange transactions. The proposed dealing platform will offer two modes of dealing– “Negotiation” and an “Order Matching.” Together, they will offer the facility of obtaining quotes, in real time, from banks, posting two-way quotes on the screen for order matching.

Initially the proposed dealing system will cover the inter-bank US\$–Indian Rupee (US\$–INR) Spot and Swap forex transactions. This segment constitutes about 85 percent of the transactions of the total Forex transactions in terms of value. Through the launch of this dealing platform, CCIL hopes to bring in wide ranging benefits to the market participant such as price competitiveness, an institutional frame-work, price discovery mechanism etc.

### 4.2.1 Eligibility

The membership of the Forex dealing segment will be initially extended only to those entities that have taken up membership of the Forex Clearing segment. This membership may be subsequently extended to entities who are not necessarily members of Forex clearing segment.

### 4.2.2 Order Matching Mode

The order matching mode will be a neutral, anonymous on a truly order driven dealing platform. It will work on the principle of ‘full price discovery’. In this mode, orders (both bids and offer) with valid inputs will be accepted for dealing and the system will endeavour to match these with the counter-orders available in the order book, based on price and time priority. The counter-party’s identity will not be disclosed to either party until after the matching has resulted in a trade. Initially, CCIL proposes to provide this mode for only US\$–INR currency pair. Subsequently other currency pairs may be made available in this mode.

### 4.2.3 Quote–Driven/Negotiation Mode

In this mode, a dealer will be able to initiate a ‘chat’ or conversation with all other dealers that use the Dealing platform. The Deals negotiated will

be captured as confirmed trades once acknowledged by both the parties. This mode will be available for other currency pairs besides US\$–INR.

#### 4.2.4 Clearing and Settlement

CCIL will provide STP (Straight Through processing) for all trades in US\$–INR done on CCIL forex dealing platform. All deals concluded in US\$–INR currency pair on CCIL's dealing platform will be taken up for settlement by CCIL's forex clearing segment. This will include deals on both the order matching mode as well as the negotiation mode.

#### 4.2.5 Risk Management

As stipulated for its existing forex clearing and settlement product, CCIL will use the Net Exposure Limits (or NDCs) and the Loss Allocation Procedure as its risk management tools. While the system will freely allow members to negotiate and complete trades, it will accept a trade for settlement only if the net payables position resulting from the concerned member's trades up to that point in time (inclusive of the trade in question) is within the NDC limit. If acceptance of a trade were to result in a violation of the NDC limit, the same will be kept in the queue until the cut-off time for accepting trades for settlement by CCIL. Members will thus have the benefit of straight-through processing without having to send deal confirmation files to their counter-parties or to CCIL, as they are currently required to do, and all trades accepted on the dealing platform will have CCIL's guarantee for settlement.

Members can also set up bilateral limits for trading against its counter members on the Dealing platform. If the orders match, trade will take place for the quantity indicated, provided it is within the Bilateral Limit set by the member on the counter-party and by the counter-party on the concerned member.

### 4.3 Interest Rate Swaps

An Interest Rate Swap (IRS) is a financial contract between two parties for exchanging streams of interest payments for a "Notional Principal Amount" on multiple occasions during a specified period. A notional principal amount is necessary in order to compute the two parties' respective

interest payment obligations. (In single currency transactions, no exchange of principal amount is needed.) Generally, IRS contracts involve exchanging fixed-rate interest payments for floating-rate interest payments (on the notional principal amounts), or vice-versa. On the designated payment dates during the swap period, each party has to make the contracted cash payments to the other. Although fixed-to-floating swap contracts with the two interest streams being tied to two different benchmark rates (LIBOR and CP/T-Bill rate, for instance, are also concluded.

Since issue of the RBI guidelines on FRA/IRS in July, 1999, activity and volume in one variant of the IRS, called Overnight Indexed Swap (OIS), has gone up steadily. Although authoritative data are not available, estimates provided by some market participants place the daily volume of such swaps at between Rs.250 and Rs.300 crore. There are some 10-12 active participants in the market; these include both Indian and Foreign banks.

In terms of the RBI guidelines, Scheduled Commercial Banks, Primary Dealers and All-India Financial Institutions, are allowed to undertake FRAs/IRS for their own balance-sheet management and for market making purposes. The guidelines allow banks/PDs/FIs to undertake only plain vanilla FRA's/IRS and place no restriction either on the size of "notional principal" or the tenor of the contract. They may use any domestic money or debt market rate as the benchmark rate, but must conform to capital adequacy norms and stipulate suitable prudential limits on their swaps positions.

The guidelines stipulate different accounting norms for Hedge Swaps and Trading Positions. Trading swaps are required to be marked to market with changes recorded in the income statement. Income and expenses relating to these swaps is to be recognized on the settlement date. The fee earned or paid, and gains or losses on the termination of swaps, are required to be recorded as immediate income or expenses.

## 5 Overnight Indexed Swaps (OIS)

In an OIS contract, the floating rate payment/receipt is linked to a benchmark, or index, rate such as NSE-MIBOR. There are several reasons why participants would like to enter into such a contract, such as:

- (a) Interest Rate Hedging – Undertaken with a view to reducing or eliminating interest rate risk in a portfolio.
- (b) Management of Asset – Liability Mismatches: This is achieved by transforming the interest payment liability from fixed rate to floating rate or vice-versa.
- (c) As a Cash Management Tool – It allows a market player to keep deploying surplus funds in the liquid overnight market, even as the interest rate risk is mitigated by locking into a term rate through OIS. And
- (d) Trading/Position Taking – based on one’s view of the future movement of interest rates, a trader may, for instance, choose to borrow overnight and invest longer term, with and OIS swap to transform the payment liability form floating rate to fixed rate.

Feedback received from the market participant is that OIS market has been steadily growing during the recent past. CCIL would take up at a later date the clearing and settlement of OIS trades and developing a trading platform for use by the members.

Currently, the deals are negotiated, as also settled, bilaterally between the two contacting parties. There is very little role for brokers, since market custom does not permit any brokerage to be paid. Yet, in the absence of any trading platform, it is a telephone market. Interestingly, deals on account of market making are the dominant variety in the OIS deals market, today. That is to say, a large majority of the deals arise from position taking by the players on their own account. The expectation in the marketplace is that, as and when public sector banks join the fray, the trading volumes will multiply manifold. FRA deals are few and far between.

It is obvious that the market will benefit from the proposed new products if CCIL takes up clearing and settlement of such transactions. These advantages will be of two types:

- From the time a deal has been accepted for settlement, all procedures leading up to final clearing and settlement will be CCIL’s responsibility.
- With CCIL giving its guarantee for settlement of the trade on the due date, members concerned will be able to free from the counter-party exposure limit.

# **Intermediation**

