# 5 Clearing and Settlement

The stock exchanges in India follow a system of batch settlement for cash market transactions. The trades accumulate over a trading cycle and at the end of cycle, these are clubbed together, positions are netted and the balance is settled by payment of cash and delivery of securities. These transactions do not mature for settlement immediately and allow a long period of about 7 to 14 days to elapse from the date of transactions before the investors can actually realise the sale proceeds/securities in accordance with the pay-in/pay-out schedule notified by respective exchanges. Given the growing volume of trades in stock exchanges between unknown participants under volatile market conditions, time gap between trading and settlement gives rise to settlement risk. In recognition of this, Exchanges have evolved different institutions and practices to ensure settlement of trades either by squaring up the transactions, by netting of funds/ securities to be delivered/received or by actual delivery/receipt of securities/funds. The regulators have also prescribed an elaborate margining and capital adequacy standards to secure market integrity and protect the interests of investors. In the absence of an arrangement to provide counter-party guarantee, the Exchanges have been advised by SEBI to set up trade/settlement guarantee funds which would honour pay-in-liabilities on the failure of a member. In pursuance to this, 10 Exchanges have set up trade / settlement guarantee funds with an aggregate corpus of Rs. 1000 crore as on 31st March 1999.

Recognising that trading members in India were in general under capitalised, NSE encouraged setting up of corporate trading members with higher capitalisation. As on 31st December 1999, 768 brokers accounting for 86 % of trading members on NSE are corporate members. These members handled over 90% of trade on NSE during April – December 1999. The fact that an anonymous electronic order book ushered in at NSE does not allow members to assess credit risk of the counter-party necessitated some innovation in this area. To effectively address this issue, NSE introduced the concept of a Clearing Corporation, and set up the first (so far only one) such corporation, viz. National Securities Clearing Corporation Ltd. (NSCCL), which commenced operations in April 1996. NSCCL assumes the counter party risk of each member and guarantees financial settlement. Counter party risk is guaranteed through a fine tuned risk management system and an innovative method of on-line position monitoring and automatic disablement. A large Settlement Guarantee Fund, which stood at Rs. 1006 crore as on 31st December 1999, provides the cushion for any residual risk. As a consequence, despite the fact that daily traded volumes have crossed Rs. 7000 crore, credit risk no longer poses any problem in the market place. The market has now full confidence that settlements will take place in time and will be completed irrespective of possible default by isolated trading members. The concept of guaranteed settlements has completely changed the way market safety is perceived.

Another significant and unique achievement in the history of Indian securities markets is Nation-wide Clearing and Settlement System initiated by NSCCL in September 1996. A member operating from more than one location across the country has the comfort of netting all his trades in a security across all the branches. A member has security wise net obligation to either receive or to deliver it. For the purpose of funds settlement, the obligations are netted for a member across all securities and the member either has to pay or receive funds.

## POLICY DEVELOPMENTS

The market regulator, SEBI has prescribed an elaborate margining and capital adequacy norms to contain and manage risk in the market. SEBI also continuously reviews working of such norms and rationalises them matching the market conditions. A few important interventions by SEBI in this regard since April 1998 are presented below:

**I.** Following abnormal price fluctuations in June 1998, SEBI introduced concentration margin of 5% payable on the cumulative outstanding position at the end of each day for each security in which the member had a concentrated exposure. In addition, 10% margin on incremental carry forward positions was prescribed.

**II.** To contain the volatility and to enhance safety in the market under conditions of abnormal price movement, SEBI evolved a mechanism for imposing margin on volatile scrips. Volatility margin at the specified rate varying from 5% to 40% was prescribed in respect of the net outstanding position in securities considered volatile from July 6, 1998. A security was considered volatile, if the price of that security varied in a single trading cycle by +/- 16% or more from the closing price of the immediately preceding trading cycle.

Once a security attracts the volatility margin, the margin would continue on the security at the margin rate as of the last day of the previous trading period for the first two trading days in the subsequent trading cycle also. For the subsequent days of the trading period, margins applicable would be as per prescribed rates above based on price variation during the current week or 5% whichever is higher. If, however, the direction of price variation had reversed in the current week and the price variation in the security had exceeded the threshold limits in the reverse direction, then the margins as per rates prescribed therefore would apply.

**III.** Earlier price of any scrip was not allowed to move beyond 10% in a day and 25% in a trading cycle. In order to provide flexibility and to ensure trading of a scrip on all trading days, it was revised to 8% in a day and weekly band was abolished.

**IV.** To ensure collection of margins, it was made mandatory for brokers to collect margins from clients in all cases where the margin in respect of the client in a settlement worked out more than Rs.50, 000. The brokers were obligated to disclose the gross outstanding position of clients.

**V.** Indian securities market suffers from counter-party risk. NSE is the only exchange which operates a clearing corporation to provide counter-party guarantee. Other Exchanges were advised to set up trade guarantee funds or settlement guarantee funds with the objective that in case of a failure of a broker to fulfill his pay-in liabilities, the Fund would provide the necessary resources and thus ensure timely completion of settlements. By March 1999, ten exchanges had set up settlement guarantee funds. The stock exchanges at Hyderabad, Cochin and Bhubaneshwar were granted an 'in-principle approval' to set up settlement guarantee funds. The aggregate corpus of the funds of all the stock exchanges, other than NSE, was over Rs. 1000 crore.

### *Rationalisation of Margin system*

The margin system was rationalised by SEBI in June 1999 in the following manner:

**I.** Credit for mark to market gain in one scrip would be given against mark to market losses in other scrips after completion of the trading cycle, when settlement dues get determined.

**II.** Margin and exposure limits exemption would be available only on actual delivery of securities.

**III.** Volatility margins would be imposed if volatility exceeds 40% and would be chargeable in four slabs ranging from 5% to 20% depending on the level of volatility. Volatility Margins would not be applicable to scrips priced below Rs.40. The following formula would be used to compute volatility on the basis of six weekly rolling period:

Volatility = (6 week high – 6 week low)/ 6 week low in percentage

**IV.** At least 25% of Base Capital would be maintained in cash and FDRs, out of which 12.5% must be in cash. Not more than 75% of base capital can be in the form of FDR/ BG/ Securities. Additional capital would be deposited in the form of Cash/ BG/ FDR/ securities subject to the condition that securities do not exceed 75% of the total additional capital. Only those securities would be accepted as part of Base Capital, which are part of the BSE Sensex/ Nifty/ BSE 100/ Jr. Nifty, BSE 200/ CNX 200. The scrips, which are in compulsory demat trading, would be accepted in demat form only.

**V.** Additional Capital available with the Exchange would be first adjusted towards requirements for gross exposure limits/ intra-day turnover limits. Excess additional capital lying with the Exchange in the form of Cash/BG/FDR may be utilised for meeting margin requirements.

**VI.** A graded scale of margins from 5% to 30% would be levied as against a flat rate of 10% for every 1% increase of the carry forward position.

**VII.** The concentration margin and 90 day special margin would no longer be necessary and were discontinued.

These margins prescribed by SEBI are the minimum margins which Exchanges are expected to collect. In cases of excessive market volatility or circumstances where higher element of risk is perceived, Exchanges are expected to impose higher margins and additional margins in the form of special/ ad-hoc or other margins as considered appropriate by the exchanges.

### *Settlement of Derivatives*

The Securities Laws (Amendment) Act, 1999 has reposed faith on the working of the settlement system on Indian stock exchanges. As a condition precedent in law, a derivative contract, has to be settled only through clearing house/corporation. It has been specified in the law that notwithstanding anything contained in any other law for the time being in force, contracts in derivatives shall be legal and valid if such contracts are traded on a recognised stock exchanges and settled on its clearing house/clearing corporation in accordance with Rules and Bye-laws of such stock Exchanges. NSCCL has already geared itself for settlement of derivative contracts.

### *Rolling Settlement (RS)*

Since the account period settlement of transactions combines the features of cash as well as futures markets, price discovery is inefficient. This practice also allows build up of large positions and consequently there is a pressure to close them out on the last trading day. As a result market witnesses significant volatility in the absence of effective lending and borrowing facilities of funds and securities. In contrast to this, all open positions under RS at the end of a date ‘T’ mandatorily result in delivery and payment X working days later. This brings in certainty of trades, reduces risk and delay in settlement and keeps excessive speculation under control. All major markets except India and France have moved to RS and are in the process of moving to 'T+1'. Even in India, there is RS in respect of trading in government securities as well as in the demat segment. The emerging consensus among financial institutions, industry, market intermediaries, depositories, stock exchanges, academicians, expert committees including those set up by SEBI and the regulator itself indicates RS in the weekly account period of trading in stock exchanges to be the next important reform measure in the securities market.

The year 1998-99 and most of this year witnessed intense debate about introduction of RS in cash segment. Though there was unanimity on its introduction, disagreement centred on its timing and preparedness of the market.

There are apprehensions in some quarters that RS may affect turnover and consequently liquidity. It may be noted that there is no direct one to one relations between turnover as evidenced by the fact that the turnover has been increasing over the last few years, but number of illiquid scrips is increasing. The facility of carry forward transactions and squaring up within the day will provide reasonable scope for speculation. Liquidity may improve especially as stock lending, lending against stocks and derivatives trading get activated. RS may improve liquidity by allowing quick turnaround of portfolios and encouraging FII inflows. In any case, batch settlement is not the best way to provide liquidity. RS, it is apprehended, may not be successful in the absence of Electronic Fund Transfer (EFT) facility. RS will be facilitated if both funds and securities can move instantaneously. Even now trades are getting settled within 8 days of the closure of the trading cycle. The trades in the demat segment and government securities are being settled under RS. In fact, transfer of funds has become quicker with facility of EFT provided by private sector banks. Many nationalised banks also provide EFT in major towns where maximum trade is generated. The banks are electronically connected to NSCCL/Clearing House for quick movement of funds for settlement of trades and payment of various margins on daily basis. It may not be difficult for present state of EFT to support RS. Doubts have sometimes been expressed about the adequacy of the existing infrastructure for rolling settlement. It may be noted that two depositories have been established and dematerialisation is progressing satisfactorily. All the stock exchanges have screen based trading system. The existing infrastructure of stock exchanges is adequate to settle at one go, all the transactions accumulated over a settlement period. Hence, it may not be difficult to settle each day's transactions daily. Back office work would in fact be spread over 5 days if RS is introduced.

Being convinced of the need for moving to RS, which marks a major change in the market architecture, SEBI has decided to introduce it with a limited number of scrips having liquidity. For the purpose, SEBI has selected 10 scrips namely, BFL Software Ltd., Citicorp Securities Ltd., Cybertech Systems & Software, Hitech Drilling Services (I), Lupin Laboratories, Maars Software International, Morepan Lab Ltd., Sri Adhikari Brothers Tel, Tata Infotech Ltd. and Visual Soft (India) Ltd. These scrips were chosen on the basis of the criteria that they are in the compulsory demat list and have daily turnover of about Rs 1 crore or more. The RS would be introduced in the aforementioned scrips from the settlements in those scrips commencing on any day in the week beginning January 10, 2000. This list, however, does not include scrips, which have carry forward trading facility. SEBI has appointed a Committee under the Chairmanship of Prof. J. R. Varma, Member, SEBI Board to recommend modalities for carry forward mechanism under the RS. Once the revised carry forward mechanism under the RS is approved, scrips in the carry forward list would also be included in the RS.

The RS would initially be on T+5 basis, 'T' representing the trade day and 'T+5' implying settlement on the 5th trading day. While this would be the minimum, any stock exchange is welcome to introduce RS with shorter rolling period.

## SETTLEMENT OF TRADES

Trades entered into on stock exchanges are required to be settled either by squaring up, carrying forward positions or settling by payment of net cash and delivery of net securities. The year 1998-99 witnessed improvement in settlement of trades by delivery. During 1998-99, 21% of shares accounting for 13% of turnover was settled by delivery and the balance was squared up/ netted out. 15% of shares accounting for 10% of turnover was settled by delivery and the balance was squared up/ netted out in the preceding year. This indicates preference for non-delivery based trades in high value securities. The stock exchange wise delivery ratio in terms of both quantity and value during 1997-99 are presented in Table No.1. The delivery ratio in terms of value in respect of Madras Stock Exchange declined from 96% in 1997-98 to 10% in 1998-99, while the same on Mangalore Stock Exchange increased from 3% to 48% - thus showing a very erratic trend in settlement by delivery. NSE accounted for 48% of total delivery based settlement in 1998-99. The turnover ratio on BSE,

**Table No. 1: Pattern of Delivery on Stock Exchanges** *(In Percent)*

| Stock Exchange | 1998 - 99 | | 1997 - 98 | |
|---|---|---|---|---|
| | Value | Quantity | Value | Quantity |
| Ahmedabad | 1.07 | 1.49 | 0.90 | 1.83 |
| Bangalore | 3.43 | 3.90 | 1.66 | 3.81 |
| Bhubaneshwar | 0.17 | 0.06 | 1.11 | 6.27 |
| Kolkotta | 1.55 | 4.21 | 1.09 | 3.01 |
| Cochin | 5.45 | 6.50 | 2.76 | 4.33 |
| Coimbatore | 2.11 | 2.28 | 0.57 | 1.39 |
| Delhi | 3.00 | 7.34 | 1.12 | 4.83 |
| Gauhati | 0.12 | 0.06 | 8.02 | 11.48 |
| Hyderabad | 9.01 | 28.45 | 4.04 | 17.64 |
| ICSEIL * | 0.89 | 3.31 | Nil | Nil |
| Jaipur | 1.94 | 3.30 | 2.48 | 4.19 |
| Ludhiana | 2.98 | 5.23 | 0.94 | 3.12 |
| Madhya Pradesh | 6.05 | 52.09 | 3.82 | 7.06 |
| Chennai | 9.69 | 20.98 | 96.49 | 92.92 |
| Magadh | 0.44 | 2.00 | 0.20 | 11.44 |
| Mangalore | 48.22 | 65.17 | 2.82 | 7.20 |
| Mumbai | 20.34 | 38.82 | 12.73 | 28.09 |
| NSEIL | 15.15 | 16.23 | 15.97 | 16.08 |
| OTCEI | 12.11 | 15.00 | 23.16 | 78.11 |
| Pune | 1.61 | 2.83 | 1.65 | 1.26 |
| Saurashtra Kutch | 0.00 | 0.00 | 6.80 | 25.00 |
| Uttar Pradesh | 1.60 | 24.94 | 1.31 | 1.69 |
| Vadodara | 1.41 | 2.45 | 1.67 | 3.30 |
| **Total** | 12.88 | 20.7 | 9.96 | 15.27 |

***Source : SEBI* Annual Report 1998-99**

though looks descent, does not reflect true picture in view of facility of carry forward of settlement. Delivery ratio was less than 10% on most of the Exchanges.

It may be noted that delivery-based trades are generally done by the investors/institutions while non-delivery based trades by the speculators. In advanced countries, transactions on customers' account constitute over 70% while on members' account less than 30%. Though this is not strictly comparable, it gives an indication of the extent of speculation. Factors responsible for excessive speculation are: (a) large scale aggressive speculations, (b) squaring up facility in the settlement system, (c) long settlement period, (d) carry forward facility (e) different settlement cycles on different stock exchanges and (f) low margin requirement. For example, an operator may do any amount of short selling or accumulate a long position and square up the trades before the end of the settlement period. Even if he is required to give delivery, he has the option to carry forward to next settlement period or shift position from one Exchange to another. The introduction of the on-line trading has also resulted in the sharp increase in speculative transactions. Since the orders are executed at quick pace, a large number of traders indulge in short term speculation in the active scrips. While it is true that speculative demand assists the liquidity and efficiency of market, too much of speculation conflicts with allocational efficiency. If speculation is to be harnessed for socially beneficial purposes, the settlement period should be shortened by shifting to RS.

## CORPORATISATION OF BROKERS

Traditionally brokerage firms in India have been individually owned or partnership concerns with unlimited liabilities. This restricts the amount of capital that such firms can raise. The growing volume of transactions made it imperative for such firms to be well capitalised and professional. The necessary legal changes were effected to open up the membership of stock exchanges to corporate members with limited liability, so that brokerage firms may be able to raise capital and retain earnings. In order to boost the process of corporatisation, capital gains tax payable on the difference between the cost of the individual's initial acquisition of membership and the market value of that membership on the date of transfer to the corporate entity was waived. In response an increasing number of brokerage firms reorganised themselves into corporate entities. The number of corporate members increased by 197 during 1998-99. At the end of March 1999, 3173 brokers out of 9069 were corporate bodies. The Stock Exchange-wise break-up of total brokers and corporate brokers as on March 31, 1999 is given in the Table No. 2. As stated earlier, NSE encouraged setting up of corporate broking members. NSE continues to have the largest number of corporate brokers, followed by OTCEI. 86.6% of members of NSE are corporate members.

## BAD DELIVERIES ON INDIAN STOCK EXCHANGES

Various measures taken by the Regulator and NSE have helped to reduce bad deliveries. The ratio of bad deliveries to net deliveries on NSE has shown a declining trend during the recent years, as may be seen from Table No. 3. The details of bad deliveries on other exchanges are not available.

## NATIONAL SECURITIES CLEARING CORPORATION LTD.

The principle of novation is the hallmark of modern clearing institutions. NSCCL has adopted this principle for settlement of all trades in equity shares,

| Table No. 2: Exchange-wise Distribution of Brokers | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Sl. No.* | *Stock Exchange* | *1998 - 99* | | | *1997 - 98* | | |
| | | Total Brokers | Corporate Brokers | Corporate Brokers as % of Total | Total Brokers | Corporate Brokers | Corporate Brokers as % of Total |
| 1 | Mumbai | 637 | 352 | 55.26 | 651 | 311 | 47.77 |
| 2 | Ahmedabad | 297 | 105 | 35.35 | 306 | 89 | 29.08 |
| 3 | Kolkotta | 935 | 155 | 16.58 | 929 | 137 | 14.75 |
| 4 | Chennai | 201 | 67 | 33.33 | 201 | 63 | 31.34 |
| 5 | Delhi | 392 | 187 | 47.07 | 390 | 166 | 42.56 |
| 6 | Hyderabad | 310 | 91 | 29.35 | 313 | 85 | 27.16 |
| 7 | Madhya Pradesh | 187 | 24 | 12.83 | 191 | 20 | 10.47 |
| 8 | Bangalore | 241 | 96 | 39.83 | 242 | 87 | 35.95 |
| 9 | Cochin | 491 | 67 | 13.65 | 492 | 57 | 11.58 |
| 10 | Uttar Pradesh | 513 | 80 | 15.59 | 528 | 67 | 12.69 |
| 11 | Pune | 200 | 42 | 21.00 | 201 | 36 | 17.91 |
| 12 | Ludhiana | 280 | 67 | 23.93 | 291 | 69 | 23.71 |
| 13 | Gauhati | 206 | 5 | 2.43 | 207 | 4 | 1.93 |
| 14 | Mangalore | 149 | 14 | 9.40 | 149 | 13 | 8.72 |
| 15 | Magadh | 196 | 15 | 7.65 | 197 | 10 | 5.07 |
| 16 | Jaipur | 594 | 17 | 2.86 | 595 | 8 | 1.34 |
| 17 | Bhubaneshwar | 234 | 15 | 6.41 | 234 | 15 | 6.41 |
| 18 | Saurashtra | 445 | 60 | 13.48 | 446 | 56 | 12.56 |
| 19 | Vadodara | 321 | 65 | 20.25 | 326 | 64 | 19.63 |
| 20 | OTC | 885 | 678 | 76.61 | 887 | 667 | 75.2 |
| 21 | Coimbatore | 198 | 61 | 30.81 | 201 | 55 | 27.36 |
| 22 | NSEIL | 990 | 856 | 86.46 | 1028 | 897 | 87.26 |
| 23 | ICSEIL | 167 | 54 | 32.34 | Nil | Nil | Nil |
| | Total | **9069** | **3173** | **34.99** | **9005** | **2976** | **33.05** |

*Source : SEBI Annual Report, 1998-99*

| Table No. 3: Ratio of Bad Deliveries to Net Deliveries at NSEIL | | | | |
|---|---|---|---|---|
| *Month* | *96 - 97* | *97 - 98* | *98 - 99* | *99 - 2000* |
| April | 0.43 | 0.35 | 0.25 | 0.24 |
| May | 0.38 | 0.39 | 0.27 | 0.20 |
| June | 0.50 | 0.41 | 0.19 | 0.29 |
| July | 0.50 | 0.41 | 0.21 | 0.24 |
| August | 0.57 | 0.41 | 0.22 | 0.24 |
| September | 0.44 | 0.42 | 0.22 | 0.29 |
| October | 0.37 | 0.32 | 0.22 | 0.27 |
| November | 0.36 | 0.29 | 0.18 | 0.26 |
| December | 0.28 | 0.28 | 0.21 | 0.22 |
| January | 0.32 | 0.21 | 0.38 | - |
| February | 0.34 | 0.19 | 0.32 | - |
| March | 0.38 | 0.20 | 0.25 | - |

*Source: NSEIL*

preference shares, debt instruments and warrants on NSE. NSCCL is the legal counterparty to the net settlement obligations of every member. NSCCL meets all settlement obligations, regardless of member complying with his obligation without any discretion. Once a member fails on any obligations, NSCCL immediately initiates measures to reduce exposure limits, withhold pay out of securities, square up open positions, disable trading terminal until member's obligations are fully discharged. It provides clearing and settlement services in trades executed in the regular, demat and 3-day segments.

### *Regular Market Segment*

NSCCL operates an account period or a periodic settlement cycle, which starts on every Wednesday and ends on Tuesday of the next week. Concluded or locked-in trades are received from NSE by NSCCL. At the end of each trading day, NSCCL determines the cumulative obligations of each member and electronically transfers the data to Clearing Members (CMs). All trades concluded during a particular trading period are settled together. A multilateral netting procedure is adopted to determine the net settlement obligations (delivery/ receipt positions) of CMs. NSCCL then allocates or assigns delivery of securities inter se the members to arrive at the delivery and receipt obligation of funds and securities by each member. Settlement is deemed to be complete upon declaration and release of pay-out of funds and securities.

Securities are paid-in on the Monday following the trading period. Funds are paid-in on the Tuesday. The pay-out for both funds and securities takes place on Wednesday. Thus settlement is completed in 8 days from end of the last day of the trading cycle. The settlement cycle may be seen in Table No. 4. On the securities pay-in day, delivering members are required to bring in securities to NSCCL. On pay out day the securities are delivered to the respective receiving members. Exceptions may arise because of short delivery of securities by CMs, bad deliveries, company objections or non-availability of clear funds in the clearing account on the pay-out day.

Each CM communicates to NSCCL on the pay-in day the securities, it is delivering and those it is unable to deliver. NSCCL identifies short deliveries on the Tuesday and conducts a buying-in auction on the pay-out day through NSE trading system. The CM is also debited by an amount equivalent to the securities not delivered and valued at a valuation price (the closing price as announced by NSE on the Friday previous to the day of the valuation). If the buy-in auction price is more than the valuation

**Table No. 4: Settlement Cycle for Regular Segment**

| Day | Particulars | Activity |
|---|---|---|
| 1-7 | Wednesday-Tuesday | Trading period |
| 8 | Wednesday | Custodians report trades which they will not settle. Such trades will be added to the member obligation. |
| 11 | Saturday | Inter region pay-in of securities; delivery of documents by the delivering members at the Clearing House |
| 13 | Monday | Intra–region pay-in of securities; delivery of documents by the delivering members at the Clearing House |
| 14 | Tuesday | Pay-in of funds by members through the Clearing Bank.<br>Shortage identification at Clearing House |
| 15 | Wednesday | Pay-out day for securities and funds<br>Auction for shortages/ bad delivery unrectified of previous settlement |
| 17 | Friday | Auction pay-in day for securities and funds. Bad delivery reporting by the receiving member to the clearing house and intimation to the delivering member |
| 18 | Saturday | Auction pay-out. Pickup of bad deliveries for rectification |
| 20 | Monday | Bad delivery rectification/replacement by the delivering member in physical form |
| 21 | Tuesday | Bad delivery rectification by the delivering member in dematerialised form<br>Auction bad delivery reporting |
| 22 | Wednesday | Bad delivery rectified payout |
| 24 | Friday | Rebad reporting. Auction bad delivery square off |
| 25 | Saturday | Rebad squareoff |

price, the CM is required to make good the difference. All shortages not bought-in are deemed closed out at the highest price between the first day of the trading period till the day of squaring off or closing price on the auction day plus 20%, whichever is higher. This amount is credited to the receiving member's account on the auction pay-out day.

All CMs are required to have accounts with any of the four specified banks, viz. Global trust Bank, HDFC Bank, Indus Ind Bank and Canara Bank. As soon as net pay obligation of a member is determined, NSCCL runs an electronic file with respective clearing banks debiting members' accounts and crediting NSCCL's account. Similarly for pay out of funds, NSCCL's account is debited and CM's account are credited. The clearing banks offer EFT facility which can be used by members from various centres to settle their fund obligations to NSCCL on one hand and releasing payments to their constituents on the other hand.

### *Inter Region Clearing*

Pay-in and pay-out of securities used to be initially conducted from Mumbai. Subsequently a part of the securities (where the delivering member and the receiving member are from the same centre) were processed at the Regional Clearing Centres (RCCs). For the balance securities, members were required to personally move the securities and pay-in them at the Central Clearing Centre (CCC), Mumbai. In order to provide a level playing field to members irrespective of their location and in true spirit of national Stock Exchange, NSCCL introduced full range of Inter Region Clearing facilities from January 1998. NSCCL started moving the securities in the normal pay in/pay out from the respective RCC to Mumbai and vice-versa free of cost to members. Insurance cover has also been arranged for immediate replacement of documents in case of loss/theft in transit. A CM has an option for pay-in/pay-out of securities either at any of the RCCs at Delhi, Kolkotta or Chennai or at the CCC. Members who opt for a RCC are required to pay-in their securities at the RCC on Saturday for securities, which are to be given to the receiving members at another RCC/CCC. NSCCL moves these documents to the CCC for onward transmission to the respective RCCs. In case the pay-in and pay-out of securities are to be conducted at the same RCC or for pay-in of securities at the CCC, such securities need to be delivered latest by Monday. The delivery obligations are worked out by the clearing system in such a manner that a CM has to deliver maximum possible quantity of securities at his chosen RCC, whereby the operating overheads are reduced and the risk associated with the movement of deliveries from the operating office to the Mumbai Clearing Centre is also minimized.

### *Bad Delivery*

Bad deliveries (deliveries which are prima facie defective) are required to be reported to the clearing house within two days from the receipt of documents. The delivering member is required to rectify these within two days. In a typical settlement cycle, bad deliveries are reported on Friday and are rectified by Monday, failing which NSCCL conducts an auction buy-in on Wednesday.

### *Company Objections*

Company objections arise when, on lodgment of the securities with the company/STA for transfer, they are returned due to signature mismatch or for any other reason for which the transfer of security cannot be effected. The original selling CM is normally responsible for rectifying/replacing defective documents to the receiving CM as per pre-notified schedule. The CM on whom company objection is lodged has an opportunity to withdraw the objection if the objection is not valid or the documents are incomplete (i.e. not as required under guideline No.100 or 109 of SEBI Good/Bad delivery guidelines), within 7 days of lodgement against him. If the CM is unable to rectify/replace defective documents on or before 21 days, NSCCL conducts a buying-in auction for the unrectified part of defective document on the next auction day (Wednesday) through the trading system of NSE. All objections which are not bought-in are deemed closed out on the auction day at the closing price on the auction day plus 20%. This amount is credited to the receiving member's account on the auction pay-out day.

### *Demat Segment*

RS is followed for settling trades in the exclusive demat segment. Each trading day is considered as a trading period and trades taking place in this trading period are settled on the 5$^{th}$ working day. Typically trades taking place on Monday are settled on the next Monday, Tuesday's trades settled on the next Tuesday and so on. Custodial confirmation takes place on/or before T+2 working day. All unconfirmed trades revert back to CMs. The settlement obligations and delivery information are provided on T+2 day. Both securities and funds are settled on T+5 working day.

In order to settle trades carried out in the demat segment, a CM needs to open a clearing account with a depository participant. Each clearing account consists of three sub-accounts, viz. (a) Pool Account: This is used by the CM to interface with his clients. The clients deliver securities to this account of the CM. The CM pools all client deliveries in this account before making a delivery to NSCCL, (b) Delivery Account: This is used by the CM to deliver securities to NSCCL. The CM moves net deliverable quantity of shares from the pool account to the delivery account from where it comes to NSCCL, and (c) Receipt Account: NSCCL gives pay-out to the CM in the receipt account from where it is transferred to the pool account of the CM.

Before pay-in, selling investors instruct depository participants to transfer security balances from their beneficiary accounts to CM's pool accounts. On or before the time and day specified for pay-in by NSCCL, the CM instructs his depository participant to move the required balance from his pool account to his delivery account. On the pay-in day, the depository moves balances from all the CM delivery accounts and sends them to NSCCL. The balances in respective CMs delivery accounts are first transferred to NSCCL's pool account which is then matched with the obligations generated by NSCCL system. the quantity and securities matched are accepted and credited to the Receipt Accounts of the receiving members through NSDL. The quantity and securities not matched for any reason whatsoever are not accepted and as such credited back to Delivery Accounts of the delivering members. On receipt of pay-out instructions from NSCCL, the Depository credits the receipt accounts of the receiving CMs. These balances are then moved back to the CM's pool accounts by the CMs. From the pool account, the CMs distribute the deliveries to the buying clients by issuing instructions to his participant.

Funds settlement takes place through designated clearing banks by a direct debit / credit to the clearing accounts maintained by the CMs with any of the clearing banks.

### *Demat Delivery in Regular Segment*

A CM has an option to deliver demat securities in the regular segment. Account period cycle is followed for settling these trades. The trading cycle for the dematerialised securities in account period settlement is identical to that for the physical securities viz., Wednesday to Tuesday, as given in

| Table No. 5: Settlement Cycle for Account Period Settlement in Dematerialised securities | | |
|---|---|---|
| **Day** | **Particulars** | **Activity** |
| 1-7 | Wednesday-Tuesday | Trading period |
| 8 | Wednesday | Custodians report trades which they will not settle. Such trades will be added to the member obligation. |
| | | Pay-in of securities; delivery of documents by the delivering members at the Clearing House |
| 14 | Tuesday | Pay-in of securities through the depository and shortages identified by the Depository.<br>Pay-in of funds by members through the Clearing Banks.<br>Pay-out day for securities through the Depository and funds through the Clearing Banks. |
| 15 | Wednesday | Auction for shortages |
| 17 | Friday | Auction pay-in and pay-out day for securities and funds. |

Table No. 5. Rules for trading and settling are similar to those for the regular market segment. For a given security, the CM has a net obligation to deliver to or receive from receiving/delivery members with NSCCL. Likewise, a CM has a net pay-in or a pay-out position for funds with respect to NSCCL. But unlike regular market segment, the settlement for funds and securities take place on the single day viz., the Tuesday following the end of the trading cycle and DVP is ensured.

## RISK CONTAINMENT MEASURES AT NSCCL

In recognition of the fact that market integrity is the essence of any financial market and believing in the philosophy that prevention is better than cure, NSCCL has put in place a comprehensive risk management system which is constantly upgraded to pre-empt market failures. The risk management process encompasses various facets including the track record / performance of members, their networth, on-line monitoring of exposure, initial as well as mark to market margin, monitoring of positions of high risk securities, etc.

### A. Margin requirements

NSCCL imposes stringent margin requirements on CMs, as explained below :

#### *(a) Mark to Market Margin*

Mark to market margin is the aggregate amount of actual loss incurred on the positions closed out during the course of the day and the notional loss, which a member would incur, if the net cumulative outstanding positions in all securities were to be closed out at the closing price of the relevant trading day. For each security, this is worked out by multiplying the difference between the close price and the price at which the trade was executed by the cumulative buy and sell open position (for buy position the close price being lower than actual trade price and for sale position the close price being higher than actual trade price). The aggregate across all securities is Mark to Market margin payable by a member. It is calculated as under :

MTM Profit/Loss = **[(Total Buy Qty X Close price) – Total Buy Value] + [Total Sale Value - (Total Sale Qty X Close price)]**

Actual profit and notional profit worked out on identical basis are ignored while calculating mark to market margin. In case of Regular Market segment, after close of a trading cycle, mark to market margin continues to be computed in respect of transactions of the closed trading cycle till its funds pay-in day because the positions for the closed settlement are not settled by way of delivery and payment. The credit for mark to market profit is therefore not taken into account and all the mark to market losses are taken into consideration. In cases where the outstanding position in a security is zero, the difference between the buy and sell values is considered for the mark to market calculation.

Mark to market losses in the Regular Market segment in a security are adjusted against the Mark to Market profits in other securities. Mark to Market margins are calculated separately for the two trading cycles. Credit for Mark to Market profits of the closed trading cycle is not given against Mark to Market losses of the current trading cycle, as per SEBI directive.

### *(b) Volatility Margin*

Volatility Margin is imposed to curb excessive volatility in the market and to act as a deterrent to building up of excessive outstanding positions. Volatility of a security is determined on the basis of fluctuations in stock prices over a six-week period. The volatility percentage is defined as :

$$\frac{\text{6 week high price} - \text{6 week low price}}{\text{6 week low price}} * 100$$

Price variations on account of calls, bonuses, rights, mergers, amalgamations and scheme of arrangements are adjusted for determining volatile securities and adjustment in prices, when securities are traded ex-benefits, is made for the purpose of computation of volatility. The margin rates are as under :

| Price Variation | Margin Rates (%) |
|---|---|
| ³ 40% - < 50% | 5 |
| ³ 50% - < 70% | 10 |
| ³ 70% - < 90% | 15 |
| ³ 90% | 20 |

The applicable margin rates are announced on the last day of the trading cycle and are applicable from the first day of the succeeding trading cycle. The volatility margin is levied on the net outstanding position of the member in each security based on the respective margin rates.

Further, if prices have been volatile, say, upwards (or downwards) and are attracting margins on the buy side (or sell side), and if the price movement reverses and exhibits a decline (or increases) of 16% or more, then the margins will be applicable on sell side (buy side) as per rates prescribed.

The volatility margins is not applicable for securities whose prices are less than Rs.40. However, it attracts volatility margin if the price of a security increases to Rs. 40 or more. If a price of a security reduces to below Rs. 40 in a trading period, it will still be eligible for consideration during that trading period.

If a security attracts both the mark-to-market and the volatility margins, the higher of the two is levied as daily margin.

### *(c) Gross Exposure Margin*

Gross Exposure Margin is computed on the aggregate of the net cumulative outstanding positions in each security of the CM in the following manner:

| Gross Exposure (Rs. Million) | Margin Payable |
|---|---|
| 0 – 10 | Nil |
| >10 and upto 30 | 2.5% in excess of Rs.10 million |
| >30 and upto 60 million | Rs.0.5 million plus 5% in excess of Rs.30 |
| >60 and upto 80 million | Rs.2 million plus 10% in excess of Rs.60 |
| >80 and upto 200 million | Rs.4 million plus 15% in excess of Rs.80 |
| >200 | Rs. 22 million plus 20% in excess of Rs. 200 million |

### *Daily Margin Payable*

A CM is required to pay a daily margin based on the higher of aggregate amount of mark to market margin (computed for all securities where mark to market margin is higher than volatility margin) or aggregate amount of gross exposure margin computed on all securities. Volatility margin (computed for all securities where volatility margin is higher than mark to market margin) is payable in addition, as daily margin.

### *B. High Capital Adequacy Norms*

A CM is required to maintain a networth of Rs. 100 lakh (Rs.75 lakh for individual member). He is also required to maintain a base minimum capital of Rs. 75 lakhs (Rs. 50 lakh for individual member) comprising of a security deposit of Rs. 25 lakh (Rs. 17.5 lakh for individual member) with NSCCL in the form of cash, FDR, approved securities or bank guarantee and a cash deposit of Rs. 50 lakh (Rs. 32.5 lakh in case of individual member), as indicated below:

| Capital Adequacy Norms | | *(In Rs. Lakh)* |
|---|---|---|
| | **Corporate Member** | **Individual Member** |
| Net worth | 100 | 75 |
| Cash Deposit | 50 * | 32.5 |
| Security Deposit | 25 | 17.5 |
| * 100 in case of new corporate members | | |

### *C. Exposure limits*

NSCCL imposes limits on turnover and exposure in relation to the base minimum capital or additional base capital of a member, which is the amount of funds, and securities that a member keeps with the Exchange/NSCCL. A member, desiring to have exposure higher than permissible against base minimum capital, is required to bring in additional base capital upfront.

#### *(a) Intra-day Turnover Limits*

Gross intra-day turnover of a CM shall not exceed 33.33 times the base capital.

#### *(b) Gross Exposure Limits*

Gross exposure of a CM at any time shall not exceed 8.5 times the free base capital (not utilised towards margin) of Rs. 100 lakh and not exceed 12 times the free base capital over Rs. 100 lakh. ( Pursuant to SEBI directive, these limits of 8.5/12 times have been reduced to 7.9/10.8 times with effect from 7th January, 2000.)

CMs exceeding the gross exposure limit are disabled to trade automatically through the default mechanism built-in into the system instantaneously until the member's cumulative gross exposure is reduced to below 8.5 times / 12 times the base capital, as the case may be, or any such lower limits as applicable to the members. Alternatively, a member may bring in additional base capital resulting in enhanced gross exposure limit.

For CMs who participate in the ALBM scheme of the Securities Lending Programme, the gross exposure created on ALBM segment is added to the gross exposure.

CMs desiring to increase the limit may bring an additional base capital by way of cash, bank guarantee, FDR or eligible approved securities subject to the condition that securities shall not exceed 75% of the total additional base capital. The additional base capital, other than approved securities, is considered for the purpose of meeting margin requirements. The additional base capital in the form of securities is used to allow enhanced gross exposure to the trading member.

A penalty of Rs. 5,000 is levied for each violation of gross exposure limit, which is paid by next day. The penalty is debited to the clearing account of CM. Non-payment of penalty in time attracts penal interest of 19 basis points per day till the date of payment.

In respect of violation of gross exposure limits on more than one occasion on the same day, each violation is treated as a separate instance for the purpose of calculation of penalty. The penalty is charged to CMs irrespective of whether he brings in margin deposits subsequently.

### D. On-Line Exposure monitoring

NSCCL has in place an on-line position monitoring and surveillance system. Exposure of the CMs is monitored on a real time basis. A system of alerts has been built in so that both the member and NSCCL are alerted when the members approach (reach 70%) their allowable limits. The system also allows NSCCL to further check the micro-details of members' positions, if required. This facilitates NSCCL to take pro-active action.

The system is also capable of continuously marking positions to market and relate mark to market losses to base capital and margins available. A portfolio analysis based system is also under development that will further help in streamlining this process of monitoring and generating alerts.

### E. Settlement Guarantee Fund

NSCCL is the counterparty to net settlement obligations of CMs. In an unlikely event of a CM defaulting in making payment of funds and/or securities, it is the responsibility of NSCCL to complete the financial settlement. NSCCL takes over the pay-in obligations of defaulting CMs and completes the pay-in process; be it for funds and/or securities. The securities obligation is closed out through the regular auction/squaring up procedure. To the extent that the auction process goes through, the receiving CM is assured of delivery of securities. In the event of a squaring up, the receiving member is assured of funds. Settlement Guarantee Fund is utilized to the extent required for successful completion of the settlement.

The Settlement Guarantee Fund is an important element of reservoir facilitating the settlement process. The Fund operates like a self-insurance mechanism and is funded through the contributions made by trading members, transaction charges,penalty amounts, fines etc. recovered by NSCCL. The corpus of the Settlement Guarantee Fund at the end of December 1999 has crossed Rs. 1000 crore.

### Contribution to the Fund

A part of the cash deposit and the entire security deposit of every CM with the Exchange has been converted into an initial contribution towards the Settlement Guarantee Fund, as indicated below :-

| Type of Member | Cash Deposit (Rs. Lakh) | Deposit in the form of bank guarantee or securities (Rs. Lakh) |
|---|---|---|
| Individual/ partnership firms | 6.00 | 17.50 |
| Corporates | 9.00 | 25.00 |

There is a provision that as and when volumes of business increase, members may be required to make additional contributions allowing the fund to grow alongwith the market volumes.

NSCCL guarantees financial settlement of settlement obligations arising out of regular market deals :

- Ø Up to the normal pay-out in the case of non-depository deals involving physical settlement of securities
- Ø All Depository deals excluding those in trade-for-trade segment and the negotiated deals.

Effective from April 1, 1998, a CM is levied a penal charge at the rate of 0.09% per day on the amount utilised from the Settlement Guarantee Fund and returnable, computed from the day on which money is used from the fund till the amount is recovered in full from the CM.

### *F. Periodic Inspection of Books*

The Byelaws of NSE and NSCCL require CMs to maintain several books of accounts and other documents. They are required to strictly adhere to a code of conduct and standards of service. NSCCL along with NSE conducts periodic inspection of the books and accounts of CMs to ensure compliance with its ByeLaws, Rules and Regulations, Rules under SCRA, Regulations relating to stock-brokers and sub-brokers notified by SEBI and various circulars, notices, orders issued by NSE/NSCCL and various guidelines, directives, circulars etc. issued by SEBI.

### *G. Penalty points and penal interest*

NSCCL has instituted a penalty points system. Non performance in settlement by way of non-payment of amounts, short delivery or bad delivery attracts penalty points and a penal interest charge. The penalty interest and points are levied for a month. The penalty points that are accumulated, and the penalty that would be imposed for different types of violations are made transparent to the CMs. The strict implementation of this system acts as a strong deterrent for settlement lapses. In addition, it also helps in identifying potential problem cases entailing risks.

Other risk containment measures include a **comprehensive insurance scheme** to facilitate trading members to cover risks arising from settlement defaults and transit risk arising from movement of securities. To minimise risks associated with bad paper, there is a system of pre-delivery verification of securities to detect upfront fake, forged or stolen securities in respect of several securities. To effectively handle this critical activity, NSCCL has put in place a **Lost and Stolen Shares - LASS database**. This database is based on information obtained from/made available by various companies/registrars and share transfer agents in respect of lost/misplace/stolen/ duplicate certificates.

## SETTLEMENT ON NSCCL

The settlement statistics on NSCCL are presented in Annexure-1. All parameters of settlement show a steady consistent trend. About 16% of trades in terms of volume value were settled by delivery during 1989-99. The percentages of bad delivery and short delivery are coming down gradually. These should disappear with full demat settlement. SEBI has been announcing from time to time securities to be settled compulsorily in dematerialised form by institutional investors and retail investors. In order to provide liquidity for these securities, the Exchange introduced a facility whereby an investor can deliver securities in dematerialised form in normal physical market segment. The number of securities delivered in demat mode in this segment called 'Unified Settlement', has increased over a period of time.

Demat delivery increased from Rs. 190 crore in April 1998 to Rs. 2568 crore in March 1999 and further to Rs. 7290 crore in December 1999. The share of demat delivery to total delivery increased from 2.5% in April 1998 to 68% in April 1999 and further to 83% in June, 1999. It has marginally declined thereafter to 79% in December 1999. The share of demat delivery in total delivery based settlement increased to 50% in terms of quantity and 77% in terms of value during April-December, 1999.

## SECURITIES LENDING & BORROWING

The Securities Lending Scheme was announced by SEBI in February 1997 with a view to facilitating timely delivery of securities to improve efficiency of the settlement system. The scheme provided for lending of securities through an approved intermediary to a borrower under an agreement for a specified period. It also defined the eligibility criteria, obligations and the responsibilities of the approved intermediary through whom lenders and borrowers can deal. There was, however, no activity for about two years.

NSCCL was granted registration on November 24, 1998 as an Approved Intermediary (AI) under the Scheme. NSCCL evolved Automated Lending and Borrowing Mechanism (ALBM) and commenced securities lending & borrowing operations on February 10, 1999. The ALBM mechanism is unique in as much as it provides investors across the length and breadth of the country an opportunity to participate through CM participants in lending and borrowing. The investor is able to lend/borrow at market determined rates.

The ALBM scheme has been designed in such a way that participants acting as lenders in ALBM have the following advantages :

- Extensive range of securities available for lending
- Nation-wide reach through NEAT trading system
- Lending of securities on an ongoing basis
- Facility of offsetting custody fee
- Use of idle stocks to generate income
- Retention of the right to receive all accrued corporate benefits during the loan period
- Market determined lending rate
- Minimum risk for the lenders, as
    - All loan transactions are fully collateralised
    - Daily mark to market of loans, and
    - NSCCL ensures return of equivalent securities

Similarly, the participants acting as borrowers in the ALBM scheme have the following advantages:

- Extensive range of securities available for borrowing
- Borrowing of securities on an ongoing basis
- Discharging settlement obligations
- No auction/close out loss
- Market determined borrowing rates
- Availability of borrowed securities in demat form
- No extra transaction cost for moving borrowed securities towards fulfilling settlement obligations

### *Mechanism*

The ALBM provides a facility to lend/borrow securities/funds at market determined rates. The NEAT trading system of the NSE, which has a nationwide reach, is used for the purpose of lending & borrowing. Members/investors, who wishes to lend/borrow securities or lend/borrow funds, participate through the spot book of the NEAT trading system on the day of ALBM trading session.

The net obligations of a participant in a particular security at the end of each ALBM session are determined on the basis of matched transactions of intentions to lend or borrow. Based on this, NSCCL gives effect to lending/borrowing transactions by settling these along with the obligations of the relevant settlement at the *Transacted Price*.

The net obligations of these lending/borrowing transactions and obligations of relevant settlement are honoured on the settlement date of respective settlement by making pay-in of required securities/ funds to the NSCCL.

Securities/funds lent, are returned by creating reverse obligation of the lending/borrowing transactions in the concurrent relevant weekly settlement for the ALBM session conducted for weekly market and in the next immediate RS for the rolling ALBM session of NSE at *Securities Lending Price (SLP)*. The return of loaned securities / cash collateral are effected along with the respective settlement. NSCCL thereby ensures the return of borrowed securities and the cash collateral.

The difference between the *Securities Lending Price and* the *Transaction Price determines the* fee/rebate earned for a security lent/borrowed.

**Say, Securities Lending Price (SLP) = Rs. 100.00**

Transaction Price = Rs. 102.00

**Tenure = 7 days**

$$\textbf{Annualised Yield} = \left[\frac{\text{(Transaction price – Securities lending price)}}{\text{Securities lending price}}\right] * \frac{365}{\text{Loan period}} * \mathbf{100}$$

Annualised Yield = [(Rs.102.00 – Rs.100.00) / Rs.100.00] * (365 /7) *100

= 26.07 % (*This is the income which the lenders of securities earn*)

If in the above example, if the transaction price = Rs. 99.00

Annualised Yield = (52.14 %) (*This is the income which the lenders of funds earn*)

NSCCL provides securities lending services backed by an efficient and transparent lending system and sophisticated risk management to enable investors to find new ways to enhance their revenues.

The details of transactions carried under ALBM mechanism is presented in Table No.8.

**Table No. 8: Operations in ALBM**

| Month | No of Loan Transactions | No. of Shares Transacted | Turnover (Rs. Lakh) |
|---|---|---|---|
| Feb-99 | 135 | 91890 | 196.71 |
| Mar-99 | 113 | 130345 | 304.49 |
| Apr-99 | 200 | 137850 | 393.44 |
| May-99 | 137 | 40849 | 91.43 |
| Jun-99 | 108 | 41134 | 142.46 |
| Jul-99 | 131 | 74856 | 247.26 |
| Aug-99 | 23 | 5625 | 24.34 |
| Sep-99 | 20 | 5273 | 77.58 |
| Oct-99 | 13 | 3070 | 24.58 |
| Nov-99 | 46 | 12341 | 73.58 |
| Dec-99 | 24 | 2496 | 12.26 |

## SETTLEMENT OF FUNDS

Settlement of trades transacted on an exchange requires smooth, preferably instantaneous, movement of securities and funds in accordance with the prescribed schedule of pay-in/pay-out. NSE has been constantly endeavouring to speed up movement of both funds and securities. Movement of securities has been almost instantaneous in the dematerialised environment where the movement the securities move from broker's account to buyer's account, the ownership vests with the buyer. Full potential of dematerialisation can, however, be realised if both the funds and securities move with the same speed and accuracy. The progress in instantaneous transfer of securities is discussed in Chapter 6.

Earlier practice of manual transfer of funds for payments as well as receipts was inefficient and time consuming. From its inception, NSE adopted electronic mode for transfer of funds. It worked out an arrangement with Canara Bank for transfer of file through modem to debit/credit trading members' accounts. According to the arrangement, members are required to maintain settlement accounts mandatorily with Canara Bank, the clearing bank. NSCCL determines funds obligations of members and forwards the file to Canara Bank which, in turn, debits/credits accounts of trading members and transmits an output file containing the details of recovery as also shortages to NSCCL. Upon receipt of this file from Canara Bank, NSCCL uploads the data into its system (known as 'NCSS').

NSCCL continued its drive to adopt newer technology and in the process brought in HDFC Bank and Global Trust Bank to offer value-added services to the trading members. According to the system in place with HDFC Bank, NSCCL takes the balance file through modem from HDFC Bank and debits/credits accounts of the trading members maintained with HDFC Bank. A file thus generated is then forwarded to HDFC Bank for the purpose of authorization whereby the respective accounts of the trading members are debited/credited. After HDFC Bank authorizes this process, the file is uploaded into its system – NCSS.

Unprecedented growth in the volume of trades needed more ease and smoothness in banking related activities for the reason of tighter risk management. This necessitated more clearing banks as well as value-added services by them. Accordingly an arrangement was worked out with Indusind Bank whereby NSCCL has a direct access to the settlement account of the trading members. This enables NSCCL to create a bank file, debit/credit the accounts of the respective trading members directly and even upload the same into the system – NCSS without intervention of Indusind Bank. However, this facility is available to be used enbloc for all the trading members and does not provide for debiting/crediting accounts of selective trading members.

RBI is working towards putting in place a system of 'electronic funds transfer', both inter-bank as well as intra-bank and extending this facility to 'institutions' registered with RBI, NSCCL is endeavouring to obtain status of 'institution', which would immensely help it in clearing and settling transactions arising out of (1) funds transfer from one clearing bank to another clearing bank, and (2) funds transfer from one branch of clearing bank to the main branch of clearing bank where settlement accounts are maintained.

# ANNEXURE - I

## SETTLEMENT STATISTICS SINCE APRIL 1997

| Month | No of Trades | Quantity of Shares Traded (lakh) | Quantity of Shares Delivered (lakh) | % of Shares Delivered to Total Shares Traded | Value of Shares Traded (Rs. Cr.) | Value of Shares Delivered (Rs. Cr.) | % of Delivery to Value of Shares Traded | Quantity of Shares Delivered in Demat Mode (lakh) | % of Demat Shares Delivered to Total Shares Delivered | Value of Shares Delivered in Demat Mode (Rs. Cr.) | % of Demat Delivered Value to Total Delivered Value | Short Delivery (Aucti-oned) | % of Short Delivery to Delivery | Unrecti-fied Bad Delivery (Aucti-oned) | % of Unrecti-fied Bad Delivery to Delivery | Funds-Pay In (Rs. Cr.) | Settle-ment Guar-antee Fund (Rs. Cr.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Apr-97** | 2,350,955 | 9,497 | 1,719 | 18.09 | 22,947 | 4,133 | 18.01 | - | - | - | - | 2,494,313 | 1.45 | 594,870 | 0.35 | 880.03 | - |
| **May-97** | 2,489,985 | 9,403 | 1,579 | 16.79 | 22,669 | 3,783 | 16.69 | - | - | - | - | 2,379,560 | 1.51 | 609,594 | 0.39 | 617.20 | - |
| **Jun-97** | 4,158,430 | 15,947 | 2,412 | 15.12 | 45,013 | 6,795 | 15.10 | - | - | - | - | 4,124,422 | 1.71 | 978,084 | 0.41 | 1433.08 | - |
| **Jul-97** | 3,531,010 | 13,004 | 2,213 | 17.02 | 34,892 | 5,938 | 17.02 | - | - | - | - | 4,011,223 | 1.81 | 896,537 | 0.41 | 873.34 | - |
| **Aug-97** | 4,193,754 | 14,956 | 2,690 | 17.99 | 39,878 | 7,121 | 17.86 | - | - | - | - | 4,800,322 | 1.78 | 1,112,642 | 0.41 | 1254.42 | - |
| **Sep-97** | 2,849,883 | 9,952 | 1,763 | 17.72 | 29,626 | 5,247 | 17.71 | - | - | - | - | 2,963,783 | 1.68 | 735,471 | 0.42 | 796.63 | - |
| **Oct-97** | 3,075,328 | 11,409 | 1,600 | 14.03 | 37,510 | 5,261 | 14.03 | - | - | - | - | 2,212,294 | 1.38 | 512,900 | 0.32 | 1222.26 | - |
| **Nov-97** | 2,844,852 | 10,101 | 1,354 | 13.40 | 29,430 | 3,904 | 13.26 | - | - | - | - | 2,105,934 | 1.56 | 391,650 | 0.29 | 692.27 | - |
| **Dec-97** | 2,894,243 | 9,659 | 1,399 | 14.48 | 28,121 | 4,054 | 14.41 | - | - | - | - | 2,483,467 | 1.78 | 393,003 | 0.28 | 784.91 | - |
| **Jan-98** | 2,917,194 | 9,607 | 1,546 | 16.09 | 23,782 | 3,816 | 16.04 | - | - | - | - | 1,802,576 | 1.17 | 321,130 | 0.21 | 623.03 | - |
| **Feb-98** | 3,502,153 | 10,722 | 1,813 | 16.91 | 30,168 | 5,096 | 16.89 | - | - | - | - | 1,897,741 | 1.05 | 352,498 | 0.19 | 1027.87 | - |
| **Mar-98** | 3,536,829 | 10,950 | 1,956 | 17.87 | 25,974 | 4,617 | 17.78 | - | - | - | - | 2,067,233 | 1.06 | 392,035 | 0.20 | 610.24 | - |
| **97 - 98** | **38,344,616** | **135,206** | **22,043** | **16.30** | **370,010** | **59,763** | **16.15** | **-** | **-** | **-** | **-** | **33,342,868** | **1.51** | **7,290,414** | **0.33** | **10,815.28** | |
| **Apr-98** | 5,005,845 | 15,203 | 3,275 | 21.54 | 35,139 | 7,505 | 21.36 | 100 | 3.05 | 190 | 2.54 | 4,141,721 | 1.26 | 816,399 | 0.25 | 1076.76 | - |
| **May-98** | 3,992,551 | 11,620 | 2,108 | 18.14 | 28,578 | 5,135 | 17.97 | 119 | 5.66 | 229 | 4.46 | 2,763,381 | 1.31 | 579,509 | 0.27 | 1006.02 | - |
| **Jun-98** | 4,454,219 | 14,057 | 2,397 | 17.05 | 36,026 | 6,131 | 17.02 | 437 | 18.23 | 635 | 10.36 | 2,433,092 | 1.01 | 462,787 | 0.19 | 1374.36 | 493.31 |
| **Jul-98** | 3,991,299 | 11,514 | 2,297 | 19.95 | 27,605 | 5,227 | 18.94 | 251 | 10.91 | 501 | 9.59 | 1,965,719 | 0.86 | 471,386 | 0.21 | 1043.42 | 497.46 |
| **Aug-98** | 3,328,555 | 8,667 | 1,359 | 15.68 | 23,245 | 3,362 | 14.46 | 407 | 29.96 | 660 | 19.62 | 1,210,469 | 0.89 | 304,945 | 0.22 | 726.10 | 493.44 |
| **Sep-98** | 4,415,072 | 13,147 | 1,935 | 14.72 | 30,748 | 4,176 | 13.58 | 450 | 23.25 | 757 | 18.12 | 1,966,317 | 1.02 | 420,508 | 0.22 | 856.34 | 491.28 |
| **Oct-98** | 3,506,979 | 10,317 | 1,790 | 17.35 | 28,890 | 4,503 | 15.59 | 455 | 25.41 | 769 | 17.08 | 1,648,882 | 0.92 | 398,173 | 0.22 | 1005.27 | 488.45 |
| **Nov-98** | 3,364,871 | 10,489 | 1,515 | 14.44 | 23,565 | 2,976 | 12.63 | 633 | 41.79 | 889 | 29.88 | 1,535,746 | 1.01 | 279,975 | 0.18 | 588.89 | 487.54 |
| **Dec-98** | 4,712,585 | 14,270 | 1,803 | 12.63 | 33,239 | 3,858 | 11.61 | 398 | 22.10 | 723 | 18.73 | 2,117,712 | 1.17 | 385,640 | 0.21 | 813.89 | 493.96 |
| **Jan-99** | 5,195,612 | 16,347 | 2,374 | 14.52 | 42,335 | 5,605 | 13.24 | 777 | 32.72 | 1,568 | 27.98 | 2,235,562 | 0.94 | 902,998 | 0.38 | 884.84 | 511.98 |
| **Feb-99** | 4,968,183 | 14,892 | 2,685 | 18.03 | 39,420 | 6,640 | 16.84 | 1,083 | 40.33 | 2,026 | 30.51 | 2,898,246 | 1.08 | 869,500 | 0.32 | 1021.12 | 528.65 |
| **Mar-99** | 8,031,342 | 24,684 | 4,408 | 17.86 | 64,783 | 11,028 | 17.02 | 1,025 | 23.24 | 2,568 | 23.29 | 5,615,031 | 1.27 | 1,080,770 | 0.25 | 1714.55 | 583.84 |
| **98 - 99** | **54,967,113** | **165,207** | **27,946** | **16.92** | **413,573** | **66,148** | **15.99** | **6,134** | **21.95** | **11,515** | **17.41** | **30,531,878** | **1.09** | **6,972,590** | **0.25** | **12,112** | |
| **Apr-99** | 4,775,528 | 11,761 | 2,339 | 19.89 | 35,988 | 3,392 | 9.43 | 838 | 35.82 | 2,302 | 67.87 | 2,810,894 | 1.20 | 554,025 | 0.24 | 1272.81 | 579.26 |
| **May-99** | 5,441,321 | 14,409 | 2,689 | 18.66 | 39,844 | 3,885 | 9.75 | 1,439 | 53.50 | 2,955 | 76.06 | 3,084,993 | 1.15 | 545,804 | 0.20 | 1544.42 | 592.51 |
| **Jun-99** | 7,274,521 | 22,429 | 3,735 | 16.65 | 50,310 | 4,436 | 8.82 | 2,066 | 55.30 | 3,697 | 83.34 | 5,173,514 | 1.38 | 1,101,171 | 0.29 | 1750.59 | 615.99 |
| **Jul-99** | 6,504,546 | 20,533 | 3,951 | 19.24 | 45,016 | 4,775 | 10.61 | 2,148 | 54.38 | 3,942 | 82.56 | 5,029,679 | 1.27 | 948,933 | 0.24 | 1694.35 | 663.37 |
| **Aug-99** | 8,909,010 | 24,430 | 4,830 | 19.77 | 62,535 | 5,999 | 9.59 | 2,213 | 45.83 | 4,490 | 74.85 | 6,980,888 | 1.45 | 1,146,003 | 0.24 | 1935.69 | 761.88 |
| **Sep-99** | 6,979,734 | 19,202 | 4,195 | 21.85 | 44,027 | 5,467 | 12.42 | 2,040 | 48.62 | 4,197 | 76.77 | 5,714,997 | 1.36 | 1,205,277 | 0.29 | 1870.19 | 815.24 |
| **Oct-99** | 8,372,623 | 23,069 | 4,892 | 21.21 | 66,750 | 7,022 | 10.52 | 2,279 | 46.58 | 5,266 | 74.99 | 6,817,574 | 1.39 | 1,317,785 | 0.27 | 2116.67 | 914.17 |
| **Nov-99** | 8,910,018 | 23,486 | 4,319 | 18.39 | 68,626 | 6,036 | 8.80 | 2,105 | 48.73 | 4,447 | 73.67 | 6,001,040 | 1.39 | 1,141,203 | 0.26 | 2120.58 | 899.27 |
| **Dec-99** | 11,619,636 | 27,239 | 5,530 | 20.30 | 108,641 | 9,192 | 8.46 | 2,995 | 54.16 | 7,290 | 79.31 | 6,875,023 | 1.24 | 1,201,209 | 0.22 | 2691.36 | 1005.82 |
| **Apr - Dec 99** | **68,786,937** | **186,557** | **36,482** | **19.56** | **521,735** | **50,204** | **9.62** | **18,122** | **49.67** | **38,587** | **76.86** | **48,488,602** | **1.33** | **9,161,410** | **0.25** | **16,996.66** | |

*- Not available*