6 Secondary Market - Clearing and Settlement

The stock exchanges in India follow a system of account period settlement for cash market transactions, except for transactions in a few securities, which are settled under T+5 rolling settlement. The trades accumulate over a trading cycle and at the end of cycle, these are clubbed together, positions are netted and the balance is required to be settled. The transactions are not settled immediately but only after a period of about 7 to 14 days from the date of transaction. The members realise the sale proceeds/securities in accordance with the pay-in/pay-out schedules notified by respective exchanges.

Seven exchanges, i.e. those at Mumbai, Delhi, Calcutta, Bangalore, Ludhiana, Ahmedabad and Madras offer a facility, called Modified Carry Forward System (MCFS), to postpone settlement by a trading cycle at a time. On other exchanges, these are settled by payment of cash and delivery of securities. NSE provides a mechanism, called Automated Lending and Borrowing Mechanism (ALBM), to facilitate timely delivery of securities by allowing participants to lend and borrow securities at market-determined rates.

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 timely settlement of trades. The regulators have also prescribed elaborate margining and capital adequacy standards to secure market integrity and protect the interests of investors. The exchanges not providing counter-party guarantee have been advised by SEBI to set up trade guarantee funds, which would honour pay-in liabilities in the event of failure of a member to meet his obligations. In pursuance to this, 16 out of 23 exchanges have set up trade guarantee funds. In case a member fails to meet his commitment and is declared a defaulter, trade guarantee fund is used to discharge his obligations. NSE, however, follows a different model where settlement obligations emanating from trades are guaranteed by a clearing corporation. The trades are settled irrespective of default by a member. The exchange follows up the defaulting member subsequently for recovery of his dues to exchange. The market has 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. This has induced a manifold increase in trading volumes.

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. The regulators and exchanges have been endeavouring to speed up movement of both funds and securities to achieve delivery versus payment (DvP) in securities transactions, that is, final and simultaneous exchange of funds and securities.

Movement of securities has become almost instantaneous in the dematerialised environment. Two depositories are in place to provide electronic transfer of securities. Ten major stock exchanges accounting for about 99% of turnover have been connected to depositories. All actively traded scrips are held, traded and settled in demat form. The securities obligations of members are downloaded to members/custodians by the clearing agency. The members/custodians make available the required securities in their pool accounts with DPs by the prescribed pay-in time for securities. The depository runs an electronic file to transfer the securities from the pool

accounts of members/custodians with DPs to the DP account of the clearing agency. As per the allocation schedule determined by the clearing agency, the securities are transferred on the pay-out day by the depository from the DP account of the clearing agency to the DP accounts of members/custodians. In case of trades settled under account period settlement, the pay-out of securities is effected on the day following the pay-in day. The pay-in and pay-out of securities are effected on the same day in case of trades settled under rolling settlement. The ownership vests with the buyer as soon as the securities move from DP account of the member/custodian to his DP account.

Select banks have been empanelled by clearing agency for electronic transfer of funds. The members are required to maintain accounts with any of these banks. The members are informed electronically of their pay-in obligations of funds. The members make available required funds in their accounts with clearing banks by the prescribed pay-in day. The clearing agency forwards funds obligations file to clearing banks which, in turn, debit the accounts of members and credit the account of the clearing agency. In some cases, the clearing agency runs an electronic file to debit members' accounts with clearing banks and credit its own account. As per the schedule of allocation of funds determined by the clearing agency, the funds are transferred on the pay-out day by the clearing banks from the account of the clearing agency to the accounts of members. In some cases, the clearing agency directly credits the members' accounts with clearing banks and debits its own account. In case of trades settled under account period settlement, the pay-out of funds is effected on the day following the pay-in day. The pay-in and pay-out of funds are effected on the same day in case of trades settled under rolling settlement.

The securities can move instantaneously from the seller to seller's broker to clearing agency to buyer's broker to buyer since all these have accounts with either of the two depositories which are connected to each other and are connected to most of the stock exchanges. The depositories have been obligated under the Depositories Act to transfer securities electronically. The movement of funds is not so instantaneous because only a few banks having the facility to transfer funds electronically have been empanelled by the clearing agency , while the members and investors have accounts in different banks at different places. In a typical settlement cycle, the funds coming in and the funds going out of a clearing bank do not match, requiring movement of funds from one bank to another by using the RBI clearing system. It also takes time to move funds from the account of the investor to the account of a member with a clearing bank. As a result, the movement of funds does not keep pace with the movement of securities, which is almost instantaneous, and there is a overnight gap between pay-in and pay-out in case of trades settled under account period settlement. However, under rolling settlement, the clearing agency provides intra-day liquidity and effects the pay-in and pay-out on the same day. Since the volumes under rolling settlement are insignificant today, the clearing agency is able to provide intra-day liquidity.

Policies and Programmes

SEBI has prescribed 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 according to changing market conditions. Major policy developments initiated during 1999-2000 and April-September 2000 are presented below:

Revision of Price Bands

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 scrip on all trading days, it was revised to 8% in a day and weekly band was abolished.

Collection of Margins from Clients

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 a client in a settlement worked out more than Rs.50,000 (subsequently revised to Rs. 1 lakh). The brokers were obligated to disclose the gross outstanding position of clients.

Modified Carry Forward System

The Modified Carry Forward System (MCFS) facility was available on BSE and exchanges at Delhi, Ludhiana and Calcutta. During the year 1999-2000, the exchanges at Ahmedabad, Madras and Mangalore were permitted by SEBI to introduce this facility.

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 margin 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/ bank guarantee/securities. Additional capital would be deposited in the form of cash/bank guarantee/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/ bank guarantee/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.

Rolling Settlement (RS)

Being convinced of the need for moving to RS, which marks a major change in the market architecture, SEBI initially decided to introduce it with a limited number of scrips commencing on any day in the week beginning January 10, 2000. For the purpose, SEBI selected 10 scrips 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. This list, however, did not include scrips, which have carry forward trading facility. SEBI appointed a Committee under the Chairmanship of Prof. J. R. Varma, Member, SEBI 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 started initially on T+5 basis, 'T' representing the trade day and 'T+5' implying settlement on the 5th trading day. While this was the minimum, stock exchanges are free to introduce RS with shorter rolling period.

SEBI reviewed in February 2000 the progress of rolling settlement. It was observed that contrary to reports about decline in volumes, liquidity and delivery in the 10 scrips across the board, analysis of the daily trading volume, and outstanding positions at the end of the day (which are also the deliverable positions) showed that in at least 5 scrips, trading volumes were higher on certain days than average of trading volumes in last six settlements prior to rolling settlement. Besides, in more than 5 scrips, deliveries had been higher on several days. Even comparisons of pre-rolling settlement and post-rolling settlement prices showed that, on some days, in at least 6 scrips, post-rolling settlement prices were higher.

Consequent on the review, SEBI added a total of 156 scrips under rolling settlement. 74 companies, which had changed names to infotech companies, were included in compulsory rolling settlement from May 8, 2000. 31 NBFCs, which are listed and traded on the BSE, but whose applications for certificate of registration were rejected by RBI, were covered under compulsory rolling settlement from May 8, 2000. 17 scrips, which exhibited high volatility (i.e. of more than 110% for 7 weeks or more in the last 10 weeks) were also included in compulsory rolling settlement from May 8, 2000. In addition, 34 companies out of 199 companies, which were already included in compulsory demat trading for all investors and did not have carry forward facility in any of the exchanges and had signed agreements with both the depositories were included for compulsory rolling settlement from March 21, 2000.

Margins on Institutional Trades

SEBI had a meeting with institutional investors, namely, FIIs, MFs, banks, FIs, domestic and foreign brokers, custodians, and BSE and NSE on February 17, 2000 to discuss the issue of margins on institutional trades. Currently, institutional trades are exempted from margin requirements.

The issue of levying of margin on institutional trades was considered in view of growing influence of institutional investors on market movements. It aimed at providing a level playing field for all investors in the market and reducing market risk and volatility. Certain operational issues, such as, modalities of payment of margins, point and timing of collection of margin, whether any permission from RBI would be required for inward remittance of foreign exchange for payment of margin, the increase in transaction cost for MFs impacting small investors, and the manner in which it would effect the expenses for which ceiling has been stipulated by SEBI (Mutual Funds) Regulations, etc. were discussed. In view of the complexities of the subject, and the need to work out the modalities before a final view on the subject was taken, it was felt that a small group consisting of the representatives of FIIs, MFs, AMFI, custodians, brokers, BSE, NSE and SEBI could be appointed to examine the above issues.

Risk Containment/Management

In a meeting of the exchanges held on March 13, 2000, it was decided to withdraw/discontinue measures like, collection of incremental additional capital and margins from top 25 brokers in the form of cash or FDRs only, additional volatility

margin on 10 scrips identified by stock exchanges in terms of outstanding positions, volume and volatility, increase in daily margin and carry forward margin by additional 5% and reduction in capital adequacy linked gross exposure limit by not less than 10% of the existing limit for the brokers of all exchanges. All these measures were imposed earlier during the year in view of the heightened volatility of the market.

To study the risk containment measures in a unified manner with the objective of making the system simple, safe and market-oriented, SEBI decided to appoint a Group on Risk Management System for the equity market with the following terms of reference:

i. Reviewing the entire risk management system comprising the margin system, exposure norms, circuit filter, capital adequacy, etc. and also to study the risk management measures in place in the cash markets in the developed and emerging market countries.

ii. Rationalising and simplifying the present risk management system for the account period settlement without compromising the present levels of safety and further strengthening the risk containment measures.

iii. Recommending risk containment measures for the securities traded in the rolling settlement.

In a meeting of the Risk Management Group of SEBI held on April 6, 2000, the following decisions were taken:

- The surplus margin available with the stock exchange in cash after adjustments for additional capital required by the broker for further exposure will be refunded by the stock exchange to the broker on daily basis. This was implemented by the stock exchanges by May 1, 2000.
- The exchanges should immediately implement the existing guideline of SEBI that the outstanding position to the extent of early pay-in of securities/funds should not be considered for computing of mark to market margin, volatility margin and exposure limits.
- The sale position, which crystallises at the end of the trading period, will be considered exempt for the purpose of calculation of exposure limit and margins. The exchanges, however, at their discretion can effect such risk management measures as they deem fit in respect of such delivery positions in case of exceptional circumstances considering the volatility and liquidity and other parameters.

The Group met again on April 26, 2000 and took the following decisions:

- *Circuit Filters*

  It was decided to relax price bands with effect from May 2, 2000, in the following manner:

  i. Once a scrip touches the 8% price band in either direction, the trading in that scrip would be restricted up to the price band for half an hour. After half an hour, the price band would be relaxed by 4% in that direction only.

  ii. The relaxation of the price band will initially be done only at NSE or BSE. The other exchanges would relax the price band (by 4%) only after such relaxation is effected at NSE or BSE.

  iii. This would initially be applicable for the top 200 scrips, which would be jointly identified by NSE and BSE.

  iv. The exchange (NSE or BSE), where the price band in any of the 200 scrips is hit first, would communicate such information to the other exchanges.

  v. In case the price band is hit on either side in the last half an hour of trading,

then the trading in that scrip would be restricted up to the price band for fifteen minutes instead of half an hour. After fifteen minutes, the price band would be relaxed by 4% in that direction only.

vi. The same formula will be applicable in respect of scrips in rolling settlement, which figure in the list of 200 scrips.

- *Carry Forward Charges to Short Seller*

  There is asymmetry in cost to long buyer and short seller. While the long buyer has to pay carry over charges to carry over the long position, the short seller does not have to do so to carry over his short position at most of the time. On the contrary, the short seller receives the carry over charges. To provide level playing field to long buyers and short sellers, it was decided that the short seller who does not either own shares or has not borrowed shares (which in that case shall be deposited with the clearing corporation/ clearing house), the carry forward charges shall not be payable to the short seller. These carry forward charges will be credited by the stock exchange to its Investor Protection Fund. This was made effective for all settlements ending after May 31, 2000.

- *Rationalising Risk Management System*

  To rationalise the Risk Management System and to address the issue of differential margins on delivery and non-delivery business, a small group was constituted.

The Group on Risk Management for equity market met on June 21, 2000 to discuss specific issues related to simplification and refining of the existing margin system, and took the following decisions:

- *Volatility Margin*

  The additional volatility margin (AVM) will not be applicable for scrips in the compulsory rolling settlement. However, the regime of the volatility margin in the account period settlement will continue. The structure of volatility margin was simplified by reducing the number of slabs and also the percentage of the margin as under:

Volatility (%)	**Margin (%)**
≥ 80 to ≤ 100	10
> 100 to ≤ 150	15
> 150	25

  The new structure was applicable from the account period commencing immediately after June 30, 2000.

- *Price Bands*

  It was decided to relax price bands by 8% with half an hour cooling period after the scrip has hit the initial price band of 8% for all the scrips falling under compulsory rolling settlement. The price bands for account period settlement have also been relaxed on similar lines for the identified 200 scrips. These would be applicable for trading on or after July 3, 2000.

- *Withdrawal of Additional Margin on Sales*

  It was decided to do away with the 5% additional margin on sale side, which was imposed on April 26, 2000. Accordingly, additional margin on net sale positions would not be levied on trades executed on and from June 26, 2000.

- *Encouragement for Delivery Based Transactions*

  If the margin in respect of trades marked for delivery at the end of the day (to be certified by broker) are secured by bank guarantee from the investor in favour of the broker or exchange, the exchange may not insist on any cash component in margins. These

trades cannot be squared up during the settlement period and must result in delivery. This would reduce the cost of delivery-based transactions resulting in higher delivery-based business.

The following decisions were taken in a meeting of the Group on Risk Management for equity market held on July 13, 2000:

- *Mark to Market Margin*

  Mark to Market Margin shall be collected separately from daily/exposure margin, as the purpose of these margins is different.

- *Gross Margins on the basis of client identification*

  The equity markets must move towards margining on a gross basis, hence all the exchanges are to modify their software in such a way that client code becomes mandatory at the broker level. This modification must be carried out by all the exchanges within three months.

- *Margin on all trades*

  All the clients excluding FIs/FIIs/MFs shall maintain a deposit of minimum margin with a broker in the form of cash, bank guarantees, FDRs or approved securities. Such margin deposit shall not be less than 10% of the net open position of a client at any point of time. Actual delivery of shares sold or actual payment made for shares bought shall be excluded from the net position.

- *Disclosure of Open Positions*

  The exchanges shall disclose the daily net open position of top 500 scrips.

Carry Forward Under Rolling Settlement

SEBI had set up a committee under the Chairmanship of Prof. J. R. Varma, Member, SEBI to: (i) consider the proposal of BSE for introduction of carry forward mechanism in rolling settlement, (ii) suggest adequate safeguards in this regard, and (iii) consider revisions in the existing carry forward mechanism. The main recommendation/observations of the Committee are:

i. Since continuous net settlement (CNS) and carry forward could turn out to be competing products, it is desirable that a decision on CNS be taken along with the decision on carry forward under rolling settlement.

ii. The carry forward period shrank from two weeks to one week when weekly settlements were introduced; it could shrink to a day when rolling settlements are introduced. The fundamental characteristics of the instrument would not change. But the proposal of weekly carry forward is fundamentally different from traditional carry forward.

iii. The committee favoured tradable weekly carry forward. That is, at the end of each trading day, the investor would have the choice of carrying forward a position for 1, 2, 3, 4 or 5 days. There would be separate screens where bids and offers could be posted for each of these five variants.

iv. The weekly carry forward system under rolling settlement may be introduced as a carry forward product. Exchanges must be allowed to introduce futures contract in individual stocks directly (without first creating a carry forward product and then migrating into a futures contract).

v. Many of the controversies (regulating a type of contract as carry forward) arise because the cash market is less tightly regulated than the derivatives market and the best solution is to bring the cash market regulation at par with that for derivatives.

SEBI considered the report and approved the following:

- Introduction of carry forward system in the rolling settlement (both daily and weekly carry forward system with maturities of 1, 2, 3, 4 and 5 days).

- Introduction of continuous net settlement (CNS) by stock exchanges.
- Changes in the existing carry forward system under weekly account period settlement as under:
  - Increase in the carry forward limit per broker from the existing limit of Rs.20 crore to Rs.40 crore. The margin up to the present limit of Rs. 20 crore will remain at the present level of 15% and incremental position will attract a minimum margin of 20%. Further, there will be scrip-wise broker-wise position limit of Rs.5 crore.
  - Continuation of margin on carry forward trades on gross basis.
  - Discontinuation of the present limit of 75 days for carrying forward trades.
  - Introduction of specific eligibility criteria for scrips in the carry forward system both in the account period and rolling settlement as well as for scrips in the CNS.

Risk Containment Measures for ALBM

A group under the chairmanship of Prof. J. R. Varma, Member, SEBI was set up by SEBI for examining various issues related to the ALBM of NSCCL, in particular the risk containment measures. Based on the recommendations of the group, SEBI decided that:

- The same position limits as in MCFS, namely a limit per broker of Rs. 40 crore in the aggregate and Rs. 5 crore per scrip, would apply to trade positions that are netted against ALBM position, and not to stand-alone ALBM positions.
- The stock exchanges desirous of implementing ALBM would need SEBI approval for the eligibility criteria for scrips to be included in the ALBM list, the process of choosing the scrips in the ALBM list, and disclosure and transparency provisions relating to ALBM.
- Any exchange desirous of implementing ALBM has to demonstrate that it has a well-designed software for margin computation and well-established governance structures and administrative infrastructure for monitoring and enforcing the margining system.
- The stock exchange or its clearing corporation implementing ALBM must be an approved intermediary under stock lending scheme.
- Receiving of charges by an uncovered short seller would be prohibited.
- ALBM transactions, which are netted against trade positions, would be subject to gross margins, as in index futures and MCFS.
- The margin on all trade positions that are to be netted against ALBM transactions shall not be less than the limit of 10% mandated for the MCFS. In cases where the position so netted by a member exceeds Rs. 200 million, the excess over Rs. 200 million would attract a margin of at least 15%.
- The financiers in the ALBM system will have the option of depositing the collateral with the clearing corporation. A financier who does so would not be subjected to daily mark to market and other margins.
- The incremental carry forward margin will be equally applicable on the ALBM and MCFS.
- The margins for MCFS and ALBM transactions should be paid 100% in cash or fixed deposits or government securities, or a combination of three.

Incremental ALBM/Carry Forward Margin

SEBI clarified that in case the position in ALBM or the carry forward position in any exchange,

in any scrip, exceeds the parameters mentioned in the table below, the additional/incremental ALBM/carry forward margin (CFM) shall be levied, in addition to the ALBM/CFM, at a rate which is higher of the rates determined as per the Table below:

Net Outstanding Market Positions (in Rs. crore)	Rate of Margin (%)	Deferred Net Position in ALBM or Carry Forward Net Position (in number of shares as % of total number of shares paid up)	Rate of Margin (%)
> 75 ≤ 100	5	> 3% ≤ 4%	5
> 100 ≤ 150	8	> 4% ≤ 5%	8
>150 ≤ 200	12	> 5% ≤ 6%	12
>200 ≤ 300	17	> 6% ≤ 7%	17
>300 ≤ 400	23	> 7% ≤ 8%	23
> 400	30	> 8%	30

The positions referred to would exclude the positions pertaining to the pure securities borrowers to the extent that the collateral securities are kept with the clearing house/corporation.

Settlement of Trades

Trades entered into on stock exchanges are either squared up or settled by payment of net cash and delivery of net securities. Members are also allowed to temporarily defer settlement by carrying forward positions on a few exchanges. The value of trades settled by delivery increased by 70% to Rs. 2,23,660 crore during 1999-20, although its share in total trades declined. During 1999-2000, 19% of shares accounting for 10.8% of turnover were settled by delivery and the balance were squared up/netted out (Table 6-1). In the preceding year, 21% of shares accounting for 13% of turnover were settled by delivery and the balance were squared up/netted out. This indicates preference for non-delivery based trades, particularly in high value securities. The delivery ratio in terms of value in respect of Hyderabad Stock Exchange increased from 9% in 1998-99 to 33% in 1999-2000, while the same on Mangalore Stock Exchange declined from 48% to nil, thus showing a very erratic trend in settlement by delivery. Delivery ratio was less than 10% on most of the Exchanges. NSE and BSE together accounted for 87% of total delivery-based settlement in 1999-2000. The delivery ratio on BSE, though looks descent, may not reflect unambigous picture in view of facility of carry forward of settlement.

It may be noted that delivery-based trades are generally done by the investors/institutions, while non-delivery based trades by the speculators. Factors responsible for excessive speculation are: (a) squaring up facility in the settlement system, (b) long settlement period, (c) carry forward facility, (d) different settlement cycles on different stock exchanges, and (e) low margin requirements. 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 trading 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.

Settlement Mechanism at NSE

The anonymous electronic order book ushered in by NSE does not allow members to assess credit risk of the counterparty. To address the concern of members about credit risk, NSE set up National Clearing Corporation Limited (NSCCL) to be a counterparty to all trades. NSCCL is the legal counterparty to the net settlement obligations of every member and meets all settlement obligations, regardless of members discharging their obligations. NSCCL assumes the counter-party risk of each member through a fine-tuned risk management system and innovative method of on-line position monitoring and automatic

Table 6-1: Delivery Pattern in Stock Exchanges

(In per cent)

Exchange	1998-1999		1999-2000	
	Quantity	Value	Quantity	Value
NSEIL	16.23	15.15	19.87	10.07
Mumbai	38.82	20.34	24.03	16.06
Calcutta	4.21	1.55	7.50	4.59
Delhi	7.34	3.00	17.06	9.40
Ahmedabad	1.49	1.07	5.34	4.63
Uttar Pradesh	24.94	1.60	2.39	2.30
Bangalore	3.90	3.43	13.11	6.24
Ludhiana	5.23	2.98	5.16	3.06
Pune	2.83	1.61	3.92	3.48
OTCEI	15.00	12.11	5.46	1.42
Hyderabad	28.45	9.01	45.44	32.77
ICSEIL	3.31	0.89	3.27	1.83
Chennai	20.98	9.69	42.26	30.40
Vadodara	2.45	1.41	5.49	3.14
Bhubaneshwar	0.06	0.17	0.00	0.00
Coimbatore	2.28	2.11	0.00	2.63
Madhya Pradesh	52.09	6.05	0.00	0.00
Magadh	2.00	0.44	0.00	0.00
Jaipur	3.30	1.94	0.00	1.00
Mangalore	65.17	48.22	0.00	0.00
Gauhati	0.06	0.12	0.00	0.00
SKSE	0.00	0.00	0.00	0.00
Cochin	6.50	5.45	0.00	0.00
Total	**20.70**	**12.88**	**18.95**	**10.82**

disablement. A large Settlement Guarantee Fund (SGF), which stood at Rs. 2,339 crore as at end-September, 2000, provides the cushion for any residual risk.

NSCCL operates a well-defined settlement cycle and there are no deviations or deferments from this cycle. It aggregates trades over a trading period, nets the positions to determine the liabilities of members and ensures movement of funds and securities to meet respective liabilities. 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 multilateral netting procedure across regions is adopted to determine the net settlement obligations (delivery/receipt positions) of members. A member has security-wise net obligation to receive/deliver the security. The obligations are netted for a member across all securities to determine his funds obligations and the member has to either pay or receive funds.

NSCCL has empanelled seven clearing banks to provide banking services to trading members. All members are required to have accounts with any of the specified banks. 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 member's accounts are credited. The clearing banks offer Electronic Funds Transfer (EFT) facility, which are 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.

It provides facility for multiple settlement mechanisms including, account period settlement for dealings in physical securities and dematerialised securities, and rolling settlement (T+5 basis) in dematerialised segment, the details of which are presented in Table 6-2.

The trading in the account period settlement cycle

Table 6-2: Settlement Cycles for CM Segment of NSE

Schedule	**Account Period Settlement**			**Rolling (T+5) Settlement**
Market Type	Normal (5-day); ALBM	Odd	Normal (3-day)	Normal (1-day); ALBM
Settlement Mode	Depository/non-Depository	Non-Depository only	Depository only	Depository only
Day 1, Wednesday				Trading
Day 2, Thursday				ALBM Transactions
Day 3, Friday	Trading	Trading	-	Custodial Confirmation; Determination of obligations
Day 6, Monday				
Day 7, Tuesday				-
Day 8, Wednesday	Custodial Confirmation; ALBM transactions; Multilateral netting across regions; Determination of obligation; Download of obligations to members/ custodians		Trading	Securities/funds pay-in/ pay-out
Day 9, Thursday		-	-	Auction for shortages
Day 10, Friday	-		Custodial confirmation; Determination of obligations	-
Day 11, Saturday	Inter-region non-depository pay-in of securities		-	
Day 13, Monday	Intra-region non-depository pay-in of securities	Securities pay-in	-	Auction pay-in/pay-out
Day 14, Tuesday	Depository pay-in of securities/funds pay-in	Funds pay-in	-	
Day 15, Wednesday	Securities/funds pay-out; Auction for shortages, unrectified bad delivery & company objections	Securities/funds pay-out; Compulsory close out of shortages	Securities/funds pay-in/ pay-out	
Day 16, Thursday	-	-	Auction for shortages	
Day 17, Friday	Auction pay-in; Reporting of bad delivery	Reporting of Bad Delivery	Auction pay-in/pay-out	-
Day 18, Saturday	Auction pay-out; Pick-up of bad delivery/company objections	Pick-up of Bad Delivery	-	
Day 21, Tuesday	Pay-in of rectified bad delivery	Pay-in of rectified bad delivery	-	
Day 22, Wednesday	Pay-out of rectified bad delivery	Pay-out of rectified bad delivery; Compulsory close out of shortages		

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 members. All trades concluded during a particular trading period are settled together. The securities and funds are paid in from 11th to 14th day and these are paid out on 15th day. Thus settlement is complete in 8 days from the last day of trading cycle.

Trades in select demat securities are settled under rolling settlement. All trades taking place on a trading day are netted together and settled on 5th day from the trading day. The securities and funds are paid-in and paid-out on the same day.

Inter Region Clearing

The delivering members bring in secuities to NSCCL on securities pay-in day. The securities are delivered to the receiving members on the securities pay-out day. In order to provide a level playing field to members irrespective of their location, NSCCL moves the securities in the normal pay-in/pay-out from the respective regional clearing centre (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 member has an option for pay-in/pay-out of securities either at any of the RCCs at Delhi, Calcutta or Chennai or at the central clearing centre (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 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 member 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 minimised. NSCCL has established connectivity with both the depositories for electronic settlement of securities.

A member has an option to deliver demat securities in the account period segment. The depository debits the pool accounts of deliverying members for their pay-in obligations of securities and credits NSCCL's account on Tuesday. On the securities pay-out day, based on the allocation schedule provided by NSCCL, the depository debits NSCCL account and credits the accounts of receiving member.

Risk Containment Measures at NSCCL

In recognition of the fact that market integrity is essence of any financial market, NSCCL has put in place a comprehensive risk management system, which is constantly monitored and upgraded to pre-empt market failures. The risk management process encompasses various facets, including the track record and performance of members, their net worth, on-line monitoring of their positions and exposure, margining, automatic disablement, etc. To safeguard the interest of the investors, the Exchange administers an effective market surveillance system to curb excessive volatility, detect and prevent price manipulations and follows a system of price bands. Further, the exchange maintains strict surveillance over market activities in illiquid and volatile securities.

The risk containment measures are described below:

A. Margin Requirements

A member is required to pay daily margin comprising of gross exposure margin, mark to market (MTM) margin (in respect of securities

where MTM margin is higher than volatility margin), and volatility margin (in respect of securities where volatility margin is higher than MTM margin).

The members are responsible to compute margin payable for all securities and make margin payments on the due date. All margins are payable on trade day plus one. Non-payment of either the whole or part of the margin amount due attracts penal charge at the rate of 0.09% per day of the amount not paid.

Gross exposure margin and AVM are not applicable on crystallised sale positions at the end of a settlement. However, MTM margin is payable on crystallised sale positions. Crystallised sale positions are determined after the custodial confirmations for the settlement and final settlement obligations are worked out.

While computing margins, institutional deals are excluded. Deals executed on behalf of financial institutions, banks and SEBI-registered FIIs/MFs are considered as institutional deals.

The three types of margins are explained below:

(a) Mark to Market Margin

MTM margin is the notional loss, which a member would incur, if the net cumulative outstanding positions in all securities were 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 MTM margin payable by a member. It is calculated as under:

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

The notional profit worked out on identical basis is ignored, while calculating MTM margin during the trading cycle. The credit for MTM profit is therefore not taken into account and all the MTM losses are taken into consideration. After close of a trading cycle, MTM 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. During the period, MTM losses in a security are adjusted against the MTM profits in other securities for transactions of the same closed trading cycle.

MTM margins are calculated separately for the different trading cycles. Credit for MTM profits of the closed trading cycle is not given against MTM losses of the current trading cycle or the closed trading cycle. NSCCL monitors the MTM losses of members on real time basis.

(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:

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

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:

Volatility (%)	Margin Slabs (%)
>80 to ≤ 100	10
>100 to ≤ 150	15
>150	25

Securities that attract volatility margin and 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.

The volatility margin 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 is still considered for the purpose of calculation of volatility margin during the current trading period.

The volatility margin is computed for each scrip, in cases where volatility margin is higher than MTM margin. The sum of volatility margin thus computed is the volatility margin payable by the number.

(c) Gross Exposure Margin

Gross exposure margin is computed on the aggregate of the net cumulative outstanding positions (purchases or sales) in each security of a member in the following manner:

Gross Exposure (Rs. crore)	Margin Payable
≤ 1	Nil
> 1 and ≤ 3	2.5% in excess of Rs.1 crore
> 3 and ≤ 6	Rs. 5 lakh plus 5% in excess of Rs.3 crore
> 6 and ≤ 8	Rs. 20 lakh plus 10% in excess of Rs. 6 crore
> 8 and ≤ 20	Rs. 40 lakh plus 15% in excess of Rs. 8 crore
> 20	Rs. 220 lakh plus 20% in excess of Rs. 20 crore

B. Capital Adequacy Requirements

The capital adequacy requirements stipulated by NSE are substantially in excess of the minimum statutory requirements as also in comparison to those stipulated by other stock exchanges. A member is required to comply with the following capital adequacy norms:

(Rs. lakh)

Requirement	Corporate Members	Individual Members
Net Worth	100	75
Cash Deposit	50*	32.5
Security Deposit	25	17.5

* 100 in case of new members.

The deposits kept with the exchange as part of the membership requirement are taken as base minimum capital of the member to determine the member's intra-day limit and/or gross exposure limit. Additional base capital is required to be deposited with the NSCCL by the member for taking additional exposure.

C. Intra-day Trading and 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) Intra-day Turnover Limit

Gross intra-day turnover (buy and sell) of a member shall not exceed 33 1/3 times the base capital (cash deposit *plus* security deposit).

(b) Gross Exposure Limit

Gross exposure of a member (i.e. the aggregate of cumulative net outstanding positions, in each security, at any point of time) at any time shall not exceed 8.5 times the free base capital (not utilised towards margin) of Rs. 1 crore and not exceed 12 times the free base capital over Rs.1 crore.

In case a member exceeds the gross exposure limit, the trading facility is automatically and instantaneously withdrawn through the default mechanism built into the system, until the member's cumulative gross exposure is reduced to below 8.5/12 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.

Members desiring to increase the limit may bring in additional base capital by way of cash, bank guarantee or FDRs. The additional base capital is used first for adjustment against gross exposure of the member. The surplus additional deposits, excluding deposits in the form of securities, are utilised for meeting margin requirements.

While computing the gross exposure of a member at any time for a particular trading day, the net outstanding positions of the previous settlement period are added to the cumulative net outstanding positions as of that particular trading day until the securities pay-in day. For members participating in the Automated Lending and Borrowing Mechanism (ALBM) scheme of the exchange, the gross exposure created on ALBM segment is added to the gross exposure.

A penalty of Rs. 5,000 is levied for each violation of gross exposure limit and intra-day turnover limit, which is paid by next day. The penalty is debited to the clearing account of the member. Non-payment of penalty in time attracts penal interest of 15 basis points per day till the date of payment. In respect of violation of gross exposure limit 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 members 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 members is monitored on a real time basis. A system of alerts has been built in so that both the member and NSCCL are alerted as per pre-set levels (reaching 70%, 85%, 95% and 100%) when the members approach 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

A large SGF, which stood at Rs. 2,339 crore at the end-September, 2000 provides the cushion for any residual risk. It operates like a self-insurance mechanism where members contribute to the Fund. In the event of failure of a trading member to meet settlement obligations or committing a default, the Fund is utilised to the extent required for successful completion of the settlement. This has eliminated counter-party risk of trading on the Exchange. The market has full confidence that settlement shall take place in time and shall be completed irrespective of default by isolated trading members.

A part of the cash deposit and the entire security deposit of every member with the Exchange has been converted into an initial contribution towards the SGF, as indicated below:

(Rs. lakh)

Type of Member	Cash Deposit	Deposit in the form of bank guarantee or securities
Individual firms	6.00	17.50
Corporates	9.00*	25.00

* Rs.15 lakh in cash of new members.

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

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

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

A member is levied a penal charge at the rate of 0.09% per day on the amount utilised from the SGF and returnable, computed from the day on which money is used from the fund till the amount is recovered in full from the member.

F. Periodic Inspection of Books

NSE and NSCCL require the trading and clearing members to maintain several books of accounts and other documents. NSE conducts periodic inspection of the books and accounts of the members to ensure compliance with Bye Laws, Rules and Regulations.

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 members. 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.

H. Indemnity Insurance

The Exchange has arranged a comprehensive insurance scheme to cover risks of trading members. The Exchange has also taken an insurance cover of Rs. 50 crore to protect against risks arising from settlement defaults and transit risk arising from securities movement among its clearing centres.

I. Database of Lost and Stolen Shares

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 Statistics

The details of settlement of trades in equities on NSE are provided in Annexure 6-1. All parameters of settlement show a consistent trend. About 20% of trades in terms of volume and 10% in terms of value were settled by delivery during 1999-2000. There has been a substantial reduction in the share of short and bad deliveries. Short deliveries averaged around 1.3% of total delivery in 1999-2000 and reduced to 1% in September 2000. The ratio of bad deliveries to net deliveries progressively declined to 0.23% in 1999-2000 and further to 0.02% in September 2000. There has been a dramatic pick-up in demat settlement which accounted for 80.1% of total delivery based settlement in 1999-2000 and 99.1% in September 2000.

Settlement Mechanism at BSE

The settlement mechanism at BSE is largely similar to that of NSE. The clearing house of BSE clears and settles trades executed on BSE, with the help of trade guarantee fund (TGF). The Exchange follows a weekly trading cycle, which starts on Monday and ends on Friday. Securities traded on BSE are classified into 'A', 'B_1', 'B_2', 'C', 'F' and 'Z' group. The 'F' group represents the debt market (fixed income securities) segment. The 'Z' group covers the list of companies which fail to comply with listing requirements and/or fail to resolve investor complaints. In addition, 'C' group

allows trading in odd lot securities in 'A', 'B_1', 'B_2' and 'Z' groups. The transactions in 'A' group scrips are allowed to be carried forward from one settlement to another settlement from the date of original transaction without any restriction as to number of days. All deliveries of securities are required to be routed through the clearing house, except for certain off-market transactions which are to be settled directly between the members concerned. The trading cycle for 'A', 'B_1', 'B_2', 'C' and 'Z' group securities representing the equity segment is from Monday to Friday, while for 'F' group securities representing the debt market, it is from Thursday to Wednesday. Table 6-3 summarises the trading and settlement cycle for 'A', 'B_1', 'B_2', 'C' and 'Z' group securities.

Trades in select demat scrips are settled under rolling settlement. The pay-in and pay-out for the transactions executed on Monday are effected on the following Monday, i.e., corresponding day in the following week. Pay-in/pay-out of funds takes place through computerised posting of debits/ credits in the members' bank accounts, while that of funds are effected by depositories.

The risk management at BSE differs from that of NSE in the following manner:

1. All active members of BSE are required to maintain a base minimum capital of Rs. 10 lakh as against Rs. 75 lakhs for corporate members of NSE (Rs. 125 lakhs for new members) and Rs. 50 lakhs for individual members of NSE.
2. BSE distinguishes between different types of members. It has two types of members, i.e., Type-I and Type-II members. Type-I members are those who have opted to avail of MCFS in 'A' group scrips, while Type-II members are those who have not so opted. Type-I members are required to deposit the base minimum capital plus additional capital of Rs. 15 lakhs and provide a bank guarantee of Rs. 10 lakhs to meet the requirement of up-front payment of daily margin on their outstanding position in 'A' group scrips. Type-I members are required to indicate through break-up session at the end of each trading day, whether the client-wise outstanding position in each 'A' group scrip is for delivery or carry forward.
3. The members of BSE are permitted a higher gross exposure as compared to NSE members. The BSE members are allowed a gross exposure of 20 times of base minimum capital and additional capital deposited with the exchange. Thus, the gross exposure of

Table 6-3: Settlement Cycle at BSE*

Day	Particulars	Activity
1-5	Monday to Friday (Monday is the 1st day and Friday is the last day of trading)	Trading on BOLT and daily downloading of statement showing details of transactions and margin statement, at the end of each trading day.
6	Saturday	Carry Forward Session (for 'A' Group Securities) and downloading of money statement.
8	Monday	Marking the mode of delivery - physical or demat.
10	Wednesday	Pay-in of physical securities
11	Thursday	Delivery of securities in the Clearing House till 2 p.m., Debiting of members' bank accounts having payable position at 5 p.m.; Pay in of demat securities at 3 p.m.; Reconciliation of securities delivered and amounts claimed.
12	Friday	Pay-out (Physical and demat securities).
13	Saturday	Funds pay-out.

* *The trading and settlement cycle for 'A', 'B_1', 'B_2', 'C ' and 'Z' group securities.*

both Type-I and Type-II members in 'A', 'B_1', 'B_2', 'C', 'F' and 'Z' group of securities, rolling settlement and demat segment together with crystallised receivable obligations or purchase position of the previous settlement for which members have yet to make pay-in and book closure Vyaj Badla positions, if any, cannot exceed 20 times of their composite capital deposited with the Exchange. In case of Type-I members, the gross exposure includes the value of outstanding transactions in 'A' group scrips carried forward from the previous settlements, including scrips in no-delivery. Vyaj Badla business are, however, excluded from the computation of gross exposure of members. As compared to this, the gross exposure of a member of NSE at any time cannot exceed 8.5 times the free base capital (not utilised towards margin) of Rs. 100 lakh and 12 times the free base capital over Rs. 100 lakh.

4. The margin system at BSE differs from that at NSE. The exchange collects daily margins from members based on their net cumulative outstanding positions in the market at the end of the trading day. Type-I members are required to pay daily margin on their trades in 'A' Group securities both for delivery as well as carry forward at the rate of 10%. The gross exposure of a member in 'A' group scrips upto Rs. 25 crore attracts daily margin of 10%, the gross outstanding position above Rs. 25 crore and upto Rs. 40 crore attracts daily margin of additional 5%, i.e., 15%, and gross outstanding position above Rs. 40 crore and upto Rs. 100 crore attracts a daily margin of additional 10%, i.e., 20%. The members also have to pay MTM margin on their positions in these scrips provided the MTM margin amount exceeds the amount already paid as daily margin. In such cases, the difference between the two margins is required to be paid. The daily margin is payable on fresh transactions during the settlement as well as positions carried forward from previous settlements.

5. The Exchange also collects daily margins from Type-I members for their transactions in 'B_1' and 'B_2' and 'Z' group securities and from Type-II members for their transactions in 'A', 'B_1' and 'B_2' and 'Z' group securities based on their gross exposure. The gross exposure (i.e. scripwise outstanding cumulative net purchase plus net sales) above Rs. 1 crore attracts daily margin at the rates given below:

Gross Exposure (Rs. crore)	**Margin**
≤ 1	Nil
> 1 and ≤ 7	10% for excess over Rs. 1 crore
> 7 and ≤ 15	Rs. 0.60 crore plus 15% for excess over Rs. 7 crore
> 15	Rs. 1.80 crore plus 20% for excess over Rs. 15 crore

The members are required to pay higher of the two margins on a daily basis, i.e. gross exposure or MTM.

6. The daily margin on transactions done in the demat segment is computed at the rate of 10% on the basis of the members' gross outstanding position, subject to a basic exemption of Rs. 10 lakhs in gross outstanding position. Further, MTM margin and AVM are computed and collected in the same manner as in the physical segment. The margin collected in the compulsory rolling settlement is also same, except that scrips under compulsory rolling settlement are exempted from payment of AVM.

7. In addition, carry forward margin is payable by Type-I members in respect of their transactions carried forward in 'A' Group scrips from one settlement to another settlement. This margin is levied at the rate of 12.5% of the value of transactions carried forward. Margin payable on book closure

Vyaj badla position is 10%. All Vyaj badla transactions except book closure Vyaj badla are exempted from payment of this margin. The rates of carry forward margin have been linked to movement of BSE Sensex in the following manner:

BSE Sensex	Carry Forward Margin (%)
Less than 4500	12.5
4500-5250	15.0
5250-6000	17.5
Above 6000	20.0

8. The members are also required to pay incremental carry forward margin (ICFM) if the net outstanding position in any 'A' group scrip at the end of a settlement at the exchange exceeds 3% of the paid-up and issued capital of a company (in terms of number of shares) or net outstanding market position in value in a scrip after the badla session exceeds Rs. 75 crore. The ICFM is charged at rates stipulated by SEBI for different levels of net outstanding market position and net carry forward position. (These rates are given earlier in the Chapter). ICFM is payable over and above the normal carry forward margin, which is at present charged at 12.5%. ICFM is applicable to both purchase and sale positions carried forward.
9. The Exchange also imposes special and adhoc margins on its members, where price manipulation is suspected, or where it is felt that margin cover vis-à-vis the exposure of the member is inadequate or a member has a concentrated position in some scrips or has common clients along with other members.
10. BSE has set up a "Brokers' Contingency Fund" for the purpose of granting refundable advances to members who may be facing temporary mismatches of funds.

Securities Lending and Borrowing

Securities lending and borrowing is an integral part of any developed securities market. G30 recommendations require that securities lending and borrowing should be encouraged as a method of expediting the settlement of securities transactions and existing regulatory and taxation barriers that inhibit the practice of lending and borrowing securities should be removed. SEBI launched the Securities Lending Scheme in February 1997 with a view to facilitate the timely delivery of securities to improve the efficiency of the settlement system and to correct the temporary imbalances between demand and supply. The scheme provided for lending of securities through an *Approved Intermediary* to a borrower under an agreement for a specified period. It also defined eligibility criteria, obligations and responsibilities of an *Approved Intermediary* through whom lenders and borrowers can deal. In terms of the scheme, SEBI approved National Securities Clearing Corporation (NSCCL), among others, as an *Approved Intermediary*.

Automated Lending and Borrowing Mechanism

NSCCL commenced securities lending and borrowing, called Automated Lending and Borrowing Mechanism (ALBM), on February 10, 1999. ALBM provides a facility to members to lend/borrow securities/funds for weekly market as well as for rolling market, at market determined rates. The ALBM mechanism is unique in as much as it provides investors/members across the length and breadth of the country an opportunity to participate through participants in lending and borrowing of securities. It is designed essentially to facilitate the members to meet the settlement obligations by borrowing the securities from the members willing to lend securities. The investor is able to lend/borrow at market determined rates.

In order to allow members to borrow seamlessly for discharge of settlement obligations and in line with international practices in this regard, ALBM settlement is integrated with normal settlements. In the interest of market efficiency and risk management, it is meaningful for a clearing corporation to net all liabilities falling due on any given day for settlement. Typically on any given day there are multiple settlements – normal, auction, rolling etc. In such situations, as long as the clearing corporation is a centralised legal counter-party, risk management would dictate that it nets all obligations vis-à-vis each counter-party to itself.

Features of ALBM

- The basic purpose of ALBM is to provide a mechanism for borrowing of securities. Securities may be borrowed for any purpose – completion of settlements on NSE or on any other exchange or for any other purpose.
- As the basic objective of ALBM is securities borrowing, securities are necessarily given to the borrower against cash collateral and are not withheld by the Clearing Corporation. The cash collateral is given to the lender as it forms a part of the returns to the lender; this is a common practice internationally where a discount on lending is offered on deposit of cash collateral.
- As the Clearing Corporation as an Approved Intermediary is required to return the securities to the lender, an obligation is created at the end of the ALBM session to return the securities borrowed.
- Transactions are done on a separate, distinct and transparent electronic book. This facilitates members to ascertain what can be lent/what needs to be borrowed, since the members' offices are spread at various locations across the country.
- 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.

Benefits of ALBM

The 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,
  - loans are marked to market on daily basis, 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.
- Discharge of 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 NEAT trading system of the NSE, which has a nationwide reach, is used for the purpose of lending and borrowing under ALBM. A participant who wishes to borrow security/lend funds for a particular security executes a borrow transaction/buy order. Similarly, the participant who wishes to lend security/borrow funds executes a lend transaction/sale order.

The net obligations of a participant in a particular security at the end of each ALBM session determine the net intention to lend or borrow. A net buy position for a security implies a firm and irrevocable intention to borrow, whereas a net sale position for a security implies a firm and irrevocable intention to lend. 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, as indicated in Table 6-2.

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 rolling market for the rolling ALBM session of NSE at Securities Lending Price (SLP). The return of lent 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 (SLP) and the Transaction Price (TP) determines the fee/rebate earned for a security lent/borrowed.

Say, SLP = Rs. 100.00
TP = Rs. 100.50
Tenure = 7 days

Annualised Yield = [(TP-SLP)/SLP] * 365/ Tenure *100

Annualised Yield = [(Rs.100.50-Rs.100.00)/ Rs.100.00] * (365 /7) *100
= 26.07%

(This is the income which the lenders of securities earn.)

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.)

Thus,

- the lender of securities earns a fee, if the TP > SLP, and
- the borrower of securities earns a rebate on borrowing, if the TP > SLP.

Tenure of Loan

NSCCL offers short fixed term loan of seven days through weekly market ALBM sessions and two days or four days (depending on the ALBM session day) tenure loan through its rolling ALBM sessions.

Criteria for eligibility of Securities on ALBM

The eligibility criteria for inclusion of securities in ALBM sessions is as follows:

- Securities must be a part of the compulsory demat list.
- Securities must meet the liquidity criteria of Nifty Junior securities, i.e., impact cost must be less than 2.5% and market capitalisation must be greater than Rs. 200 crore (calculated over one year).

The growth of transactions carried under ALBM mechanism are presented in Table 6-4 and Chart 6-1.

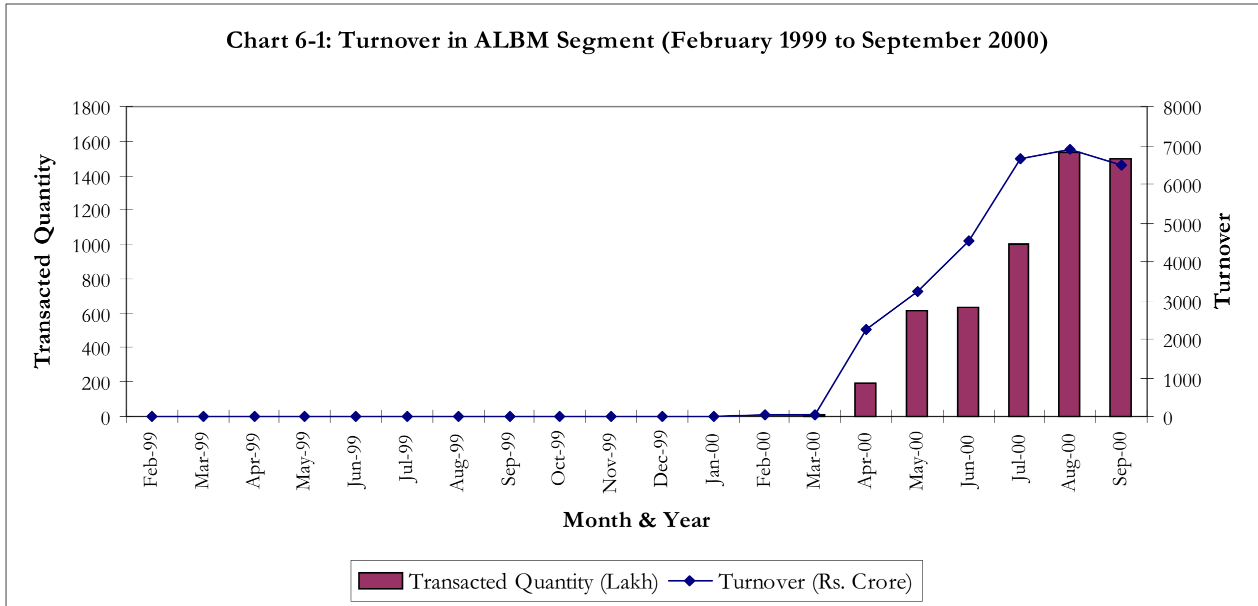

Table 6-4: Turnover in ALBM Segment

Month/ Year	Quantity (lakh)	Turnover (Rs. crore)
Feb-99	1	2
Mar-99	1	3
Apr-99	1	4
May-99	0	1
Jun-99	0	1
Jul-99	1	2
Aug-99	0	0
Sep-99	0	2
Oct-99	0	0
Nov-99	0	1
Dec-99	0	0
Jan-00	0	5
Feb-00	2	22
Mar-00	5	49
Apr-00	193	2,242
May-00	616	3,217
Jun-00	634	4,512
Jul-00	1000	6,638
Aug-00	1536	6,906
Sep-00	1493	6,472

Issues in Clearing and Settlement

Rolling Settlement

The account period settlement of transactions combines the features of cash as well as futures markets and hence distorts price discovery process. This also allows build up of large positions and consequently, there is a pressure to close them out on the last trading day, leading to significant volatility in the absence of effective lending and borrowing facilities of funds and securities. In contrast to this, all open positions under rolling settlement (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.

Several countries have adopted T+3 settlement system whereby trades done on Monday are settled on the following Thursday. Though the NSCCL has systems in place to settle all trades in all securities under rolling settlement, the regulator has mandated T+5 system for a limited number of relatively less liquid stocks. Contrary to the apprehension that the rolling settlement would drain liquidity from the market, the global

experience suggests that shortening trading period and shifting to rolling settlement increases liquidity in the market. The recent experience of UK, which shifted from a fortnightly account period trading to T+5 rolling settlement, has proved that shortening of the settlement cycle actually leads to much greater level of liquidity. The main reason why rolling settlement leads to greater liquidity is that the risks in trading and settlement get substantially reduced especially when rolling settlement is accompanied by a system of continuous net settlement and collateralised lending and borrowing of securities and funds. Liquidity may improve especially as stock lending and derivatives trading gain momentum. 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 also apprehended, may not be successful in the absence of EFT facility. RS will be facilitated if both funds and securities can move instantaneously. 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 clearing corporation/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. It may not be very difficult to settle each day's transactions daily. Back office work would be spread over five days if RS is introduced.

SEBI has already mandated scrips trading under rolling settlement in respect of 156 scrips with effect from May 8, 2000. The stocks brought under the rolling settlement as yet do not cover any of the stocks that are part of the MCFS, which are highly active and liquid scrips. The fear is that until we have a satisfactory alternative to the current MCFS system, which provides facility to carry over settlement of trades to the next settlement, it would be risky to cover the MCFS stocks under rolling settlement. SEBI had appointed a Committee under the Chairmanship of Prof. J. R. Varma, Member, SEBI, to recommend modalities for carry forward mechanism under the RS. Following recommendations of Varma Committee, SEBI has decided that at the end of each trading day, the investor would have the choice of carrying forward a position for 1, 2, 3, 4 or 5 days. Software for this facility is being developed. It will, however, be quite some time before the entire market is brought under the rolling settlement. By the time Indian market adopts T+5 and then transitions to T+3 rolling settlement, the world would have moved further substantially in this area by further reducing the settlement cycle to say T+2 or even T+1 system.

Continuous Net Settlement

Internationally, the Continuous Net Settlement (CNS) has been effectively employed by the clearing corporations for the settlement of transactions and for maintaining an orderly flow of money and securities. The CNS is essentially a post-settlement process, which enables the seller, who cannot deliver securities, to postpone the settlement of his obligations to the subsequent settlement. It is primarily a tool for imparting flexibility to the seller and avoiding painful auctions.

The CNS system is an automated book-entry accounting system, which centralises the settlement of security transactions and maintains an orderly flow of security and money balances.

Throughout the CNS processing cycles, the system generates reports that provide participants with a complete record of security and money movements, and related information. CNS as offered in the NSCC of NYSE offers users the following efficiencies and risk protections:

- Regardless of volume, CNS nets on a daily basis participants' security obligations to one another, net buy or sell position in each issue, minimising security movements and associated costs.
- Through CNS, the clearing corporation becomes the counter-party to each matched trade and guarantees settlement for eligible transactions.
- Closing positions are marked-to-market daily, which reduces risk and ensures the integrity of the system.
- While deliveries between CNS and users' depository positions are made automatically, participants can exempt certain short positions (or portions thereof) to avoid segregation violations and effectively meet other delivery needs.
- Fully automated CNS minimises manual operations on the part of participants.
- Cash and stock dividends and bond interest are automatically debited or credited to participants' CNS accounts with respect to open fail positions.

In India, CNS in rolling settlement was recently approved by SEBI. The salient features of CNS are as follows:

- Novation is the key for operating a CNS mechanism. In novation, the clearing corporation is the legal counterparty for all traded positions. In a CNS environment, all traded positions of members are netted to one single position in each security, i.e. either long or short and the funds positions for a settlement day are netted to a single position, i.e. either to pay or receive funds. The identity of trading members to a trade is no longer available, thereby necessitating a legal counterparty to each net position. The clearing corporation emerges as the third party to provide novation to all net positions, both long and short positions.
- CNS aims at increasing operating efficiencies to all the market participants. All netted positions of a member, both securities and funds, are settled locally at the member level and only net market positions are settled through the common place, clearing corporation. This enhances liquidity for the members and clients, reduces costs of transactions and improves the speed of settlement of transactions.
- CNS would be available only in compulsory rolling settlement segment.
- CNS is delivery initiated.
- In the CNS process, the short deliveries of the seller are marked to the closing price of the day and the corresponding amount is debited to the delivering member and credited to the receiving member.
- The settlement of CNS positions is postponed to immediate subsequent settlement.
- Since the CNS is a post-settlement facility, the receiving member has to necessarily fulfill his funds pay-in obligation. The receiving member, however, would be subsequently credited for the value of the deliveries to the extent that he has received short.
- The receiving member has an option of insisting on delivery. The members can indicate the preference for compulsory receipt of delivery in which case it will be allocated higher priority for delivery receipt.

In the event of failure to deliver shares to such receiving members, these positions would be removed from the CNS and subjected to compulsory delivery. Compulsory buy-in or close-out would be effected in the event of failure to deliver.

- Outstanding positions can be carried forward for a maximum period of 30 days. All outstanding positions beyond the 30 days limit shall be removed from CNS and shall be subject to compulsory buy-in mechanism.

Straight Through Processing

Once the exchanges are able to use the safest Straight Through Processing (STP) for connecting the broker offices with the banks and DPs on real time basis, the risks will almost vanish. Under this system, the selling client's DP account will be checked as soon as broker gets sale order through the internet for securities balances and, similarly, buying client's bank account will be checked for cash balances. Only if this check confirms availability of adequate balances of either stock or cash, the order will be routed by the broker's trading terminal for trade execution. NSE has been working with the banks and brokers to gradually introduce STP so that the settlement risks are further eliminated.

Clearing Bank

NSCCL is working towards same day pay-in and pay-out of funds and securities. Under the current dispensation, the pay-in and pay-out of funds take place on consecutive days under account period settlement as the funds take time to move from client to bank and then to RBI and pay-in has to be confirmed before pay-out is declared. While the securities move into settlement account with depository, the funds lie with the clearing bank overnight. Since NSCCL is obliged to complete settlement by bringing in funds/securities even if there are shortages, it is necessary that it has full control over pay-in and pay-out of funds and securities and these do not lie with any third party. Ideally, the funds and securities should not lie even with NSCCL and pay-in and pay-out should take place as instantaneously as possible. In case of rolling settlement, NSCCL actually provides intra-day liquidity and declares pay-out in advance of the confirmation of pay-in and as a result, pay-in and pay-out take place on the same day. As volumes under rolling settlement increases, NSCCL would not be able to fund and declare same day pay-out. For success of rolling settlement and for pay-in and pay-out of funds to take place on the same day, it is necessary for NSCCL to directly participate in RBI clearing.

Clearing Corporation

There is a need for an arms' length relationship between the stock exchanges and their clearing and settlement agencies. Given its functions, a clearing and settlement agency may not necessarily have the presence of traders on its management. Further, it may not be necessary that each stock exchange must have its own exclusive clearing and settlement agency. It may be better if the stock exchanges use the services of only one or two clearing corporations, as the depository services are used by them. The international practice seems to lend support to sharing of services of a clearing corporation by many stock exchanges. Such an arrangement would allow the clearing agency to have an overall view of gross exposure position of traders across the stock exchanges and would be much better geared to manage the risk.

In the interest of use of capital, the regulations should permit cross margining, which takes into account a dealer's/portfolio holders' combined position in cash and derivatives segments and across all exchange to reduce capital requirement of market intermedaries.

In the interest of market efficiency and risk management, it is meaningful for a clearing corporation to net all liabilities falling due on any given day for settlement. Typically on any given day there are multiple settlements - normal, auction, rolling, etc. In such situations, as long as the clearing corporation is a centralised legal counter-party, risk management would dictate that it nets all obligations vis-à-vis each counter-party to itself.

The stock exchanges supervise the buying and selling activities of the brokers, but do not guarantee financial settlement of trades. These are guaranteed by a Clearing Corporation which creates a fund called 'Settlement Guarantee Fund' to ensure settlement of trades on the appointed day and time irrespective of default by trading members to bring in the required funds and/or securities. This arrangement has revolutionised the secondary market investments in India by bringing in a large number of retailer investors to the market and has also encouraged foreign investors to invest in Indian securities market in a large way. It is important to keep improving the value of the Settlement Guarantee Fund by adding back all the accruals to the fund, subject to administrative expenses, to retain and build up the faith that the retail and foreign investment have reposed in the settlement mechanism. For this purpose, it is necessary to exempt the income of the Clearing Corporation from the purview of income tax.

Annexure 6-1: Settlement in CM Segment of NSE

Month/ Year	No. of Trades	Traded Quantity (Lakh)	Delivered Quantity (Lakh)	% of Delivered Quantity to Traded Quantity	Turnover (Rs. crore)	Delivered Value (Rs. crore)	% of Delivered Value to Total Turnover	Delivered Quantity in Demat Mode (Lakh)	% of Demat Delivered Quantity to Total Delivered Quantity	Delivered Value in Demat Mode (Rs. crore)	% of Demat Delivered Value to Total Delivered Value	Short Delivery (Auctioned)	% of Short Delivery to Delivery	Unrectified Bad Delivery (Auctioned)	% of Unrectified Bad Delivery to Delivery	Funds Pay-in (Rs. crore)	Setttlement Guarantee Fund (Rs. crore)*
1994-95 (Nov.-Mar.)	**303,078**	**1,330**	**688**	**51.74**	**1,728**	**898**	**51.98**	**—**	**—**	**—**	**—**	**585,240**	**0.85**	**175,905**	**0.26**	**300**	**—**
1995-96	**6,436,268**	**39,010**	**7,264**	**18.62**	**65,742**	**11,775**	**17.91**	**—**	**—**	**—**	**—**	**17,861,105**	**2.46**	**3,217,420**	**0.44**	**3,258**	**—**
1996-97	**26,232,840**	**134,317**	**16,453**	**12.25**	**292,314**	**32,640**	**11.17**	**—**	**—**	**—**	**—**	**38,225,293**	**2.32**	**6,625,244**	**0.40**	**7,212**	**—**
1997-98	**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**	**—**
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	1,077	—
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	1,006	—
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	1,374	493
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	1,043	497
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	493
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	491
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	1,005	488
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	589	488
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	814	494
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	885	512
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	1,021	529
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	1,715	584
1998-99	**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**	**584**
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	1,273	579
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	1,544	593
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	1,751	616
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	1,694	663
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	1,936	762
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	1,870	815
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	2,117	914
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	2,121	899
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	2,691	1,006
Jan-00	6,153,304	13,586	3,255	23.96	60,502	7,263	12.01	1,873	57.56	6,076	83.65	4,372,872	1.34	776,916	0.24	2,502	897
Feb-00	11,569,150	22,405	5,111	22.81	121,322	13,231	10.91	3,310	64.77	11,496	86.88	5,334,441	1.04	582,810	0.11	3,890	1,455
Mar-00	9,065,786	14,918	3,372	22.60	96,782	9,877	10.21	2,262	67.09	8,858	89.69	4,236,771	1.26	492,066	0.15	3,584	1,391
1999-2000	**95,575,177**	**237,465**	**48,219**	**20.31**	**800,341**	**80,576**	**10.07**	**25,568**	**53.03**	**65,016**	**80.69**	**62,432,686**	**1.29**	**11,013,202**	**0.23**	**26,972**	**1,391**
Apr-00	6,828,423	11,210	2,203	19.65	62,228	6,730	10.82	1,569	71.25	6,256	92.96	3,061,441	1.39	290,015	0.13	3,242	1,358
May-00	11,481,848	18,293	2,701	14.76	80,211	6,800	8.48	2,172	80.40	6,469	95.13	3,168,436	1.17	203,114	0.08	3,351	1,342
Jun-00	11,684,778	16,610	2,409	14.50	99,564	7,248	7.28	1,900	78.87	6,930	95.62	2,410,947	1.00	153,081	0.06	2,951	1,503
Jul-00	11,315,381	16,934	2,293	13.54	99,541	6,998	7.03	1,951	85.08	6,758	96.56	2,393,677	1.04	106,405	0.05	3,032	1,494
Aug-00	14,186,839	21,334	2,836	13.29	117,655	8,267	7.03	2,524	89.01	8,069	97.61	2,358,358	0.83	120,967	0.04	3,945	2,161
Sep-00	12,863,616	22,335	2,775	12.42	131,243	8,288	6.32	2,639	95.11	8,211	99.06	2,696,414	0.97	56,968	0.02	3,709	2,339
April-September 2000	**68,360,885**	**106,716**	**15,216**	**14.26**	**590,442**	**44,332**	**7.51**	**12,755**	**83.83**	**42,693**	**96.30**	**16,089,273**	**1.06**	**930,550**	**0.06**	**20,229**	**2,339**

* As at the end of period.