

**Centre for Distance and Online
Education
Punjabi University, Patiala**



Class : BBA-Part-III Semester : V
**Paper : BBA-510 (Stock Market Operations) Unit:II Medium :
English**

Lesson Nos. (Updated on 30th June 2023)

- 2.1 : STOCK MARKET TRADING**
- 2.2 : CLEARING AND SETTLEMENT**
- 2.3 : DEPOSITORY SYSTEM IN INDIA**
- 2.4 : FUTURES MARKET OPERATIONS**

Department website : www.pbidde.org

STOCK MARKET TRADING

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2.1.1 OBJECTIVES The students shall be able to understand the trading, clearing and settlement of securities in stock markets after going through this lesson. Derivatives trading, futures and options trading have been elaborated upon in this chapter.

2.1.2 INTRODUCTION

The stock market trading system in the country is discussed in this chapter with reference to (i) cash/normal trading, (ii) derivative trading mechanism of the National Stock Exchange (NSE) Ltd.

Sponsored by the Industrial Development Bank of India, the NSE has been co-sponsored by other development/public finance institutions, LIC, GIC, banks and other financial institutions such as the SBI Capital Market, SHCI Ltd, ILFS Ltd and so on. India has had a history of stock exchanges limited in their operating

jurisdiction to the cities in which they were setup. The NSE represented an attempt to overcome the fragmentation of regional markets by providing a screen-based system that transcends geographical barriers. The main objective has been to set up comprehensive facilities for the entire range of securities under a single umbrella, namely,

- To set up a nationwide trading facility for equities, debt instruments and hybrids;
- To ensure equal access to investors across the country through an appropriate communication network;
- To provide a fair, efficient and transparent securities market to investors using the electronic trading system;
- To ensure shorter settlement cycles and book entry settlement systems and
- To meet the current international standards prevalent in the securities industry/markets.

2.1.3 STOCK MARKET TRADING

The broad system of cash/normal trading mechanism in the Indian stock market is illustrated below with reference to the National Stock Exchange (NSE) Ltd.

2.1.3.1 Constitution

The NSE has three segments for cash trading in securities. The Wholesale Debt Market (WDM), Capital Market (CM) and Trading in Central Government Securities segments. Separate membership is required for the first two segments.

2.1.3.2. Wholesale Debt Market (WDM) Segment

The WDM segment provides a facility for institutions/body corporates (institutional investors) to enter into high value transactions in instruments such as Government securities, T-bills, public sector undertakings (PSU) bonds, units of mutual funds, certificates of deposits, commercial papers and so on. The players on the WDM segment are trading members (TMs) and participants.

2.1.3.3 Trading Members

These are the recognised members of the NSE. Body corporates, subsidiaries of banks and financial institutions can become TMs. They are selected on the basis of a comprehensive selection criteria. Whole-time directors/dealers of these should possess at least two years' experience in any activity related to banking/financial services. They must possess a minimum net worth of Rs. 2 crore. The annual fee is Rs 30 lakh, and a TM cannot withdraw his membership before five years. The applicant must be engaged solely in the securities business and not in any fund-based activity. The minimum paid-up capital should be Rs 30 lakh. TMs can either trade on their own or on behalf on their clients, including participants.

2.1.3.4 Participants

Participants are the organisations directly responsible for the settlement of trade. They are large players in the market and as such take direct settlement responsibility of their own trades executed through TMs. Participants have access to the NSE trading system to enable them to see the breadth and depth of the market through enquiry screens. They are able to monitor all market movements.

2.1.3.5 Trading System

The fully computerised, online trading system has changed the very manner in which trading is perceived in the Indian stock market. Besides the fact that the system has increased trading velocities and cut time-frames, it has also managed to incorporate the critical aspect of security in its functioning. The NSE provides a facility for screen-based trading with order matching facility. Members are connected from their respective offices, at different locations, to the main system at the NSE premises through a high-speed efficient satellite telecommunication network. The trading system is an order driven, automated order matching system that does not reveal the identity of parties to an order or to a trade. This helps orders, whether large or small, to be placed without the members being disadvantaged by disclosure of their identity. The trading system operates on a *price-time priority*. Orders are matched automatically by the computer, keeping the system transparent, objective and fair. Where an order does not find a match it remains in the system and is displayed to the whole market, till a fresh order that matches comes in or the earlier order is cancelled or modified.

2.1.3.6 Access

The WDM trading system recognizes three types of users: trader, privileged, and inquiry. Trading members can have all the three user types whereas participants are allowed privileged and inquiry users only. The user of a trader gives access for entering orders or trades on the trading system. The privileged user has the exclusive right to set up counter party exposure limits. The inquiry user can only view the market information and set up the market watch screen but cannot enter orders, trade or set up exposure limits.

2.1.3.7 Market Type

Trading on the WDM segment can be executed in the continuous or negotiated market. In the continuous market, order entered by the trading members are matched by the trading system. For each order entering the trading system, the system scans for a probable match in the order books. On finding a match, a

trade takes place. In case the order does not find a suitable counter in the order books, it is added to the order books and is called a passive order. This could later match with any future order entering the order book and result in a trade. This future order, which results in matching of an existing order, is called the active order.

2.1.3.8 Trade Type

WDM trading system provides for trading in debt and other instruments, either as outright purchase and sale as Non-Repo trades or as Repo. While entering the order, the trading member has to indicate the trade type (Non Repo or Repo) and the desired settlement terms if their order is to result in a trade. Similarly, the Repo terms also need to be specified if the order is a repo order. Currently, the NSE permits the settlement term from T + 0 (that is, same day) to T+5 (six days) and Repo term from three to 14 days. Repo is allowed in certain government securities, PSU bonds and corporate debentures that are traded in an electronic form.

2.1.3.9 Order Matching Rules

Orders are matched on the basis of price-time priority. For non-repo trades, the best-buy order is the one with the highest buy price and the best sell order is the one with the lowest price. Orders are matched automatically by the trading system based on passive order price. In case of repo trades, the best buy order is one with the lowest buy rate and the best sell order is one with the highest sell rate. The trade is based on passive order rate.

2.1.3.10 Order Types and Conditions

The system provides flexibility to enter various types of orders with time, volume and price related conditions.

2.1.3.11 Security Descriptor

Security descriptor to the unique identification of the subject matter of the trade and is divided into six parts. All orders are matched on the basis of descriptors. It consists of the following components: Security Type, Security, Issue, Settlement, Trade Type and Repo term.

2.1.3.12 Basis of Trading

Order matching is essentially on the basis of the security descriptor, price/rate, volume, order type and conditions. The value of the order/trade is indicated in "Rs lakh" in the trading system. All orders are required to comply with the minimum order size and multiple size, as specified by the NSE. These

requirements depend on the type of security. For example, all orders for securities issued by the Central Government should be for a minimum of Rs 100 lakh or multiple thereof.

A separate category (retail lot) has been created, wherein orders for Rs 1 lakh and Rs 0.01 lakh are accepted as the minimum and the multiple order size, respectively.

2.1.3.13 Exposure Limits

Every participant can set up counter party exposure limits to ensure that all his trades are within the exposure limits set up for the respective counterparty. This provision enables the participants to minimise the risk associated with any counterparty.

2.1.3.14 CP Exposure Screen

This facility is available only to the privileged trading members and participants. The user can set up exposure limits against other trading members of participants with respect to buy, sell, buy+sell or buy-sell transactions. The user can set limit for a certain amount or has an option to trade without restrictions, that is, NO LIMIT. The system provides flexibility to set up different limits for different trade types (repo, non-repo) and settlement days (same day, day one, day two, any other day).

2.1.3.15 How This Limit Works

Any trading member/participant can set up/modify CP limits on other trading member/participant to commence trading on the WDM system and used for validation of all transaction before order are matched for trades. Every time a trade is executed, between respective trading members/participants, the limits is reduced by trade consideration. On settlement of the trade, the limit is restored to the original level, that is, all same day trades reduce limit available during the day for trading and the limits are restored for the next trading day. Where trades are executed for other day settlement (say, T + 2), the limit would be restored on T + 3 day. The limits will be overwritten only when the trading member/participant modifies the previously set limits. All trades executed by trading members, for their participants (entities registered with the NSE as participants), will not affect the trading member's counterparty exposure and will be reckoned only in the participant's counterparty exposure. All client trades are done by the trading member on his own account and settled directly by the client. This reduces the exposure limit available to the trading member.

2.1.4 Clearing and Settlement The primary responsibility of setting trades concluded in the WDM segment rests directly with the participants and the NSE monitors the settlements. These trades are settled in Mumbai, as per the procedure laid down:

- Trades are settled directly between the constituents/participants to the trade and not through any clearing house mechanism. Thus, each transaction is settled individually and netting of transactions is not allowed.
- Settlement is on a rolling basis, that is, there is no account period settlement. Each order has a unique settlement date specified upfront at the time of order entry and used as a matching parameter. It is mandatory for trades to be settled on the predefined settlement date. The NSE currently allows settlement periods ranging from same day (T+0) settlement to a maximum of six working days (T+5). On the schedule settlement date, it provides data/information to the respective member/participants regarding trades to be settled on that day with details like security, counterparty and consideration.
- Government securities, including treasury bills, are settled by the participants through their Subsidiary General Ledger (SGL) account (a book entry system) with the RBI or through the exchange of physical certificates. The required settlement details, that is, certificate number, SGL from number, cheque number, constituent, and so on are reported by the member/participant to the NSE. Other instruments are settled through delivery of physical security. In the case of Repo trades, the settlement details of the forward leg is also reported.

The NSE closely monitors the settlement of transactions through the reporting of settlement details by members and participants. In case of deferment of settlement or cancellation of trade, participants are required to seek its prior approval. For any dispute arising in respect of the trades or settlement, the NSE has established an arbitration mechanism for resolving the same.

2.1.4.1 NSE SGL A/c Facility for Constituents The NSE has the approval of the RBI to operate a second SGL facility for constituents. Banks had originally been provided with this facility to give an impetus to the process of widening the government securities market but this did not quite take off. It is in this context that the SGL facility has been provided to the NSCC of the NSE to give a fillip to trading in government securities. The NSE uses this facility to open constituent SGL accounts for all non-SGL participants who are currently unable

to get the benefit of a DVP (delivery vs payment) settlement. The constituents would include trading members, PFs, trusts, corporates and so on.

With the RBI SGL and current account facility, the NSE can take up the clearing and settlement of non-bank/institutional trades through the clearing corporation. This makes it possible to provide counterparty guarantee for trades settled through the clearing corporation in due course. This also does away with the current difficulties in inter-city settlements as well as physical settlements and enhances debt trading activity across other centres. In order to encourage government securities trades, transaction charges for the SGL settlement would be nominal, at Rs 50 per transaction.

2.1.5 Capital Market (CM) Segment:

The CM segment of the NSE provides an efficient and transparent platform for trading of equity and preference shares, debentures, warrants, coupons and exchange-traded funds. This segment started operations in November, 1994.

2.1.5.1 Trading Mechanism:

The trading system, known as the National Exchange for Automated Trading (NEAT) system, is an online, fully automated nationwide, anonymous, order driven, screen based trading system where a member can punch into the computer quantities of securities and the prices at which he likes to transact and the transaction is executed as soon as it finds a matching sale or buy order from a counterparty. It electronically matches orders on a strict price/time priority and, hence, cuts down on time, cost and risk of error, as well as on fraud, resulting in improved operational efficiency. It allows faster incorporation of price sensitive information into prevailing prices, thus, increasing the informational efficiency of markets. It enables market participants to see the full market on real-time, making the market transparent. It allows a large number of participants, irrespective of their geographical locations, to trade with one another simultaneously, improving the depth and liquidity of the market. It provides tremendous flexibility to the users in terms of kinds or orders (Good-Till-Cancelled, Good-Till-Day, Immediate-Or-Cancel, Limit Stop-Loss) that can be placed on the system. A Good-Till-Cancelled (GTC) order remains in the system until it is cancelled by the trading member (TM). It is, therefore, able to span trading days if it is not matched. A Good-Till-Day (GTD) order allows the TMs to specify the days up to which the order should stay in the system; at the end of this period, the order gets flushed out from the system. An Immediate-Or-Cancel (IOC) order allows a TM to buy/sell a security as the order is released into the market, failing which the order is removed from the system. A Stop-Loss order

allows the TM to place an order that gets activated only when the market price of the relevant security crosses a threshold limit. Until then, the order does not enter the market. In the case of Stop-Loss sell order, the order gets triggered if the last traded price is less than or equal to the Stop Loss sell price. It ensures full anonymity by accepting orders (big or small) from members without revealing their identity, thus, providing equal access to everybody. It provides a perfect audit trail, which helps to resolve disputes by logging in the trade execution process in entirety.

The trading platform of the CM segment is accessed not only from the computer terminals at the premises of brokers spread over about 400 cities, but also from the personal computers in the homes of investors, through the internet, and from the hand held devices, through WAP.

2.1.5.2 Online IPOs The online trading system of the NSE is used by companies to make IPOs through book-building. It is a fully automated screen-based bidding system that allows trading members to enter bids on behalf of their clients. All bids received by the system are numbered, time stamped, and stored in the book till the last day of the book building process, and the offer price is determined after the bid closing date. While ensuring efficient price discovery, this system reduces time taken for the completion of the issue process.

2.1.5.3 Transaction Charges The maximum brokerage chargeable by a trading member, with respect to trades effected in the securities admitted to dealing on the CM segment, is fixed at 2.5 per cent of the contract price, exclusive of statutory levies like the SEBI turnover fee, service tax and stamp duty. However, brokerage charges as low as 0.15 per cent are also observed in the market. A member is required to pay the NSE transaction charges at the rate of 0.004 per cent (Rs 4 per Rs 1 lakh) of the turnover.

2.1.6 Trading of Central Government Securities With a view to encourage wider participation of all classes of investors, including retail, across the country, trading in Government Securities has been introduced from January 2003 through a nation-wide, anonymous, order-driven, screen-based trading system of stock exchanges, in the same manner in which trading takes place in equities subject to the following conditions:

1. **Eligible Stock Exchanges:-** Presently, the RBI has permitted the banks and financial institutions to transact in Government securities among themselves or with non-bank clients through the members of the BSE, the NSE and the OTCEI. These eligible stock exchanges have been permitted to provide the facility for trading in Government securities.

2. *Eligible Securities:-* All Government securities as notified by the RBI from time to time are eligible to be traded on the automated, anonymous, order-driven system of the eligible stock exchanges.
3. The eligible stock exchanges, upon receipt of the notification from the RBI should immediately disseminate the information to the market through the ticker facility as well as through their websites.
4. *Listing of Government Securities:-* The Government Securities would be deemed to be listed at issuance.
5. *Members Eligible to Trade in Government Securities:-* The members of the eligible stock exchanges having the net worth of Rs 1 crore or more are eligible to trade in the government securities on the eligible stock exchanges.
6. *Trading Module:-* The Government securities should be traded along with the equity segment in the anonymous, screen based, order driven trading system in which trade should be matched on the basis of price time priority.
7. The trading price should be inclusive of interest. The eligible stock exchange should provide a mechanism for disseminating the information on accrued interest on the security separately.
8. The minimum order size should be 10 units of Rs100 each and multiple s thereof.
9. *Clearing and Settlement System:-* The settlement should take place on T+2 rolling settlement basis as in the case of equity segment.
10. The trades entered by the member/client in a day in the same security would be eligible for intraday netting as in the equities market.
11. The settlement should take place at the traded price of the security.
12. The trades executed during the day should be settles and cleared as in the equities market.
13. The clearing members should settle obligations only through the clearing corporation/clearing house of the eligible stock exchanges, and the settlement of securities should be done through the depositories.
14. *Settlement of Funds and Securities:-* As in the funds settlement for the equity segment, the clearing corporation/clearing house of the eligible stock exchange would provide the security settlement, obligation to the depositories which would then effect the paying from the clearing member's account of

clearing corporation/clearing house account by 11 A.M. in the morning and effect pay-out after the confirmation simultaneously with the funds pay-out.

15. *Shortage of Funds/Securities:-* Funds shortages of the clearing members should be made good by the clearing corporation/house from the settlement/trade guarantee fund.

16. All deliverable positions should ordinarily result in delivery of securities. In the exceptional event of a failure/shortage in delivery of securities, the clearing house/corporation would resort to financial close-outs. The close-out would be done at Zero Coupon Yield Curve (ZCYC) valuation for prices plus a 5 per cent penalty factor.

17. The buyer would be eligible for the highest trade price from the trade date to the date of close-out or closing price of the security in the normal market on the close-out date plus interest calculated at the rate of overnight FIMDA-NSE MIBOR for the close-out date and the balance should be credited to the Investor Protection Fund of the eligible stock exchange.

18. The eligible stock exchange should monitor the entities which default frequently and send a report of such entities of the SEBI and the RBI on fortnightly basis.

19. *Risk Management Systems:-* The clearing corporation/house should provide the financial guarantee for settlement obligations to its clearing members. For this purpose, the eligible stock exchanges should set up a separate trade guarantee fund/settlement guarantee fund distinct from the one for the equity market for guaranteeing the settlement of transactions in Government securities.

20. The gross exposure should not exceed 20 times the capital deposited by a member at the eligible stock exchange for the purpose of trading in Government securities.

21. *Margins:-* The positions should be market-to-market until settlement. The market-to-market margin should be calculated on the basis of ZCYC.

22. The above margin should be collected on T + 1.

23. *Reporting and Other Requirements:-* A weekly reporting mechanism should be separately advised.

24. Further, a mechanism for exception reporting to the RBI and the SBI, covering, inter alia, settlement failures, exceptional price-volume movements, etc. on a daily basis should also be put in place by the eligible stock exchanges.

25. *Inspections:-* The SEBI inspection of stock exchanges and depositories would include the operations of Government securities also.

26. The stock exchanges should set up a mechanism for inspecting the members permitted to trade in Government securities to the satisfaction of the SEBI

2.1.6.1 Self-check Exercise 1:How is clearing and settlement of securities done?

2.1.7. DERIVATIVES TRADING

The first step towards introduction of derivatives trading in India was the promulgation of the Securities Laws (Amendment) Ordinance, 1995, which withdrew the prohibition on options in securities. The market for derivatives, however, did not take off, as there was no regulatory framework to govern the trading of derivatives.

Derivatives trading commenced in India in June 2000 after the SEBI granted the final approval to this effect in May 2001. It permitted the derivative segment of two stock exchanges, NSE and BSE, and their clearing house/corporation to commence trading and settlement in approved derivatives' contracts. To begin with, it approved trading in index futures contracts based on the S & P CNX Nifty and the BSE-30 (Sensex) Index. This was followed by approval for trading in options based on these two indices and options on individual securities. The trading in index options commenced in June 2001 and the trading in options individual securities commenced in July 2001. Futures contracts on individual stocks were launched in November 2001. Exchange traded interest derivatives contracts have been introduced with effect from June, 2003. Trading and settlement in derivatives contracts is done in accordance with the rules, bye-laws, and regulations of the respective exchanges and their clearing house/corporation, duly approved by the SEBI and notified in the official gazette.

2.1.8 TYPES OF DERIVATIVES

The most commonly used derivative contracts are forwards, futures and options.

Forward Contract:- A forward contract is an agreement to exchange an asset, for cash, at a predetermined future date specified today. At the end of the contract, one can enter into an offsetting transaction by paying the difference in the price (pay offs). Forward contracts are private bilateral contracts to settle them at some future date. They are exposed to a default risk by counterparty.

Each forward contract is unique in terms of contract size, expiration date and the asset type/quality.

Futures/Future Contracts:- Future contracts are transferable specific delivery forward contracts. They are agreements between two counterparties to fix the terms of an exchange/lock-in the price today of an exchange that will take place between them at some fixed future date. As highly standardized contracts between sellers (writers/shorts) and buyers (longs), they obligate the former to deliver and the latter to receive the given assets in the specified quantities of specified grades, at a fixed time in the future, at the contracted prices. The period of contract (deferment) may vary between 3 to 21 months. Depending on the underlying assets, they could be commodity/financial futures and stock index futures (interest rate/currency).

In contrast to forward contracts, future contracts are standardized trade able contracts. They are standardized in terms of size, expiration date and all other features. They are liquid and transparent. Their market prices and trading volumes are regularly reported. The future trading system has effective safe guards against defaults in the form of corporation guarantees for trades and the daily cash adjustment (mark to market) to the accounts of trading members, based on daily price change. Futures are far more cost efficient than forward contracts for hedging.

Options:- Options are contracts that give the holder the right (but not the obligation) to buy (call option) or sell (put option) securities at a pre-determined price (strike/exercise price) without/at the end of a specified period (expiration period). For the holders of call and put options, the exercise of the right would be worthwhile only if the price of the underlying securities, of the respective option, rises/falls above/below the exercise price. There can be options on commodities, currencies, securities, stock index, individual stocks and even on futures. In order to acquire the right of option, the option buyer pays the option seller (option writer) an option premium, which is the price paid of the right. The buyer of an option can lose no more than the option premium paid but his possible gain is unlimited. The option writer's possible loss is unlimited but his maximum gain is restricted to the option premium charged by him to the holder.

2.1.9 FUTURE AND OPTIONS TRADING SYSTEM

The futures and options trading system of the NSE, called the NEAT-F&O trading system, provides a fully automated screen-based trading for Nifty futures and options as well as stock futures and options on a nationwide basis through an online monitoring and surveillance mechanism. It supports an order driven market and provides complete transparency of trading operations. It is similar to trading equities in the cash market segment (discussed earlier). Keeping in view the familiarity of trading members with the current capital market trading

system, modifications have been made in the existing capital market trading system so as to make it suitable for trading futures and options.

2.1.10 ENTITIES IN THE TRADING SYSTEM

There are four entities in the trading system: Trading members, clearing members, Professional clearing members and Participants

Trading Members (TMs):- Trading members are members of the NSE. They can trade either on their own account or on behalf of their clients, including participants. The NSE assigns a trading member ID to each TM. Each TM can have more than one user. The number of users allowed for each TM is notified by the NSE from time to time. Each user of a TM must be registered with the NSE and is assigned a unique user ID. The unique TM ID functions as a reference for all orders/trades of the different users. This ID is common for all users of a particular TM. It is the responsibility of the trading member to maintain adequate control over persons having access to its user IDs.

Clearing Member (CM):- Clearing members are members of the NSCCL. They carry out risk management activities and confirmation/inquiry of trades through the trading system.

Professional Clearing Members (PCM):- A professional clearing member is a clearing member who is not a trading member. Typically, banks and custodians become professional clearing members and clear and settle for their trading members. Typically, banks and custodians become professional clearing members and clear and settle for their trading members.

Participants:- A participant is a client of TMs like financial institutions (FIs). These clients may trade through multiple TMs but settle through a single CM.

Basis of Trading:- The NEAT F&O system supports an order driven market, wherein orders match automatically. Order matching is essentially on the basis of security, its price, time and quantity. All quantity fields are in units and price in rupees. The lot size on the futures market is for 200 Nifties. The NSE notifies the regular lot size and tick size for the contracts traded on this segment from time to time. When any order enters the trading system, it is an active order. It tries to find a match on the other side of the book. If it finds a match, a trade is generated. If it does not find a match, the order becomes passive and goes into the respective outstanding order book in the system.

Corporate Hierarchy:- In the F&O trading software, a TM has the facility of defining a hierarchy amongst users of the system. This hierarchy comprises the corporate manager, the branch manager and the dealer.

Corporate Manager:- The 'corporate manager' is a user placed at the highest level in a trading firm. Such a user can perform all functions such as order and trade related activities and receive reports from all branches/dealers of the trading member firm. Additionally, he can define exposure limits for the branches of the firm, this facility is available only to him.

Branch Manager:- The branch manager is a user who is placed under the corporate manager. He can perform and view order and trade related activities for all dealers under that branch.

Dealer:- Dealers are users at the lower most level of the hierarchy. A dealer can perform/view the order and other trade related activities. Belonging only to himself and does not have access to information on other dealers, either under the same branch or in other branches.

The activities possible for specific user categories are explained below:

- The clearing member corporate manager can view outstanding order, previous trades and the net position of his client TMs by putting the Trading member identification (TM ID) and leaving the Branch ID and Dealer ID blank.
- The CM and TM corporate manager can view (a) Outstanding orders, previous trades and the net position of his client TMs by putting the TM ID and leaving the branch ID and the dealer ID blank; (b) Outstanding orders, previous trades and net positions entered for himself by entering his own TM ID, branch ID and user ID (this is his default screen); (c) Outstanding orders, previous trades and the net position entered for his branch, by entering his TM Id and branch ID fields; (d) Outstanding orders, previous trades, and net positions entered for any of his users/dealers by entering his TM ID, branch ID and user ID fields.
- The CM and TM dealer can only view requests entered by him.
- The TM corporate manager can view the outstanding (a) requests and activity log for requests entered by him, by entering his own branch and user IDs. This is his default screen; (b) requests entered by his dealers and/or branch managers by either entering the Branch and/or user IDs or leaving them blank.
- The TM branch manager can view the outstanding (a) requests and activity log for requests entered by him, by entering his own branch and user IDs. This is his default screen; (b) requests entered by his users, either by filling the user ID field with a specific user or leaving the user ID field blank.
- The TM dealer can only view requests entered by him.

2.1.11 Orders Types and Conditions:- The systems allows the TMs to enter orders with various conditions attached to them, as per their requirements.

These conditions are broadly divided into the following categories: (1) Time conditions (2) Price conditions (3) Other conditions. Several combinations of the above are allowed, thereby providing enormous flexibility to the users. The order types and conditions are summarized below.

Time Condition: Day Order:- A day order is an order which is valid for the day on which it is entered. If the order is not executed during the day, the system cancels the order automatically at the end of the day.

Good Till Cancelled (GTC):- A GTC order remains in the system until the user cancels it. Consequently, it spans trading days, if not traded on the day the order is entered. The maximum number of days an order can remain in the system is notified by the NSE from time to time, after which the order is automatically cancelled by the system.

Good Till Days/Date (GTD):- A GTD order allows the user to specify the number of days/date till which the order should stay in the system, if not executed. The maximum number of days allowed by the system are same as in a GTC order. At the end of this day/date, the order is cancelled from the system.

Immediate or Cancel (IOC):- An IOC order allows the user to buy or sell a contract as soon as the order is released into the system, failing which the order is cancelled from the system. Partial match is possible for the order, and the unmatched portion of the order is cancelled immediately.

Price Condition: Stop-Loss:- This facility allows the user to release an order into the system after the market price of the security reaches or crosses a threshold price, for example, if for a stop-loss buy order the trigger is 1027, the limit price is 1030 and the market (last traded) price is 1023, then this order is released into the system once the market price reaches or exceeds 1027. This order is added to the regular lot book as a limit order of 1030, with the time of triggering as the time stamp. For the stop-loss sell order, the trigger price has to be greater than the limit price.

Other Conditions: Market Price:- Market price orders are orders for which no price is specified at the time the order is entered (ie, the price is the market price). For such orders, the system determines the price.

Trigger Price:- Price at which an order gets triggered from the stop-loss book.

Limit Price:- Price of the orders after triggering from stop-loss book.

Pro:- means that the order are entered on the TMs own account.

Cli:- means that the TM enters the order on behalf of a client.

Placing Orders on the Trading System:- For both the futures and the options market, while entering orders on the trading system, members are required to identify orders as being proprietary or client orders. Proprietary orders should be identified as 'Pro' and those of clients should be identified as 'Cli'. Apart from this, in the case of 'Cli' trades, the client account number should also be provided.

The futures market is zero sum game, that is, the total number of long in any contract always equals the total number of short in any contract. The total number of outstanding contracts (long/short) at any point of time is called the "open interest" which is a good indicator of the liquidity in every contract.

Market Spread/Combination Order:- The NERAT F&O trading system also enables to enter spread/combination trades. This enables the users to input two or three orders simultaneously into the market. These orders would have the condition attached to it that unless and until the whole batch of orders finds a counter match, they would not be traded. This facilitates spread and combination trading strategies with minimum price risk.

Basket Trading:- In order to provide a facility for easy arbitrage between futures and cash markets, NSE has introduced the basket-trading facility. This enables the generation of portfolio offline order files in the derivatives trading system and its execution in the cash segment. A TM can buy or sell a portfolio through a single order, once he determines its size. The system automatically works out the quantity of each security to be bought or sold in proportion to their weights in the portfolio.

Futures and Options Market Instruments:- The F&O segment of the NSE provides trading facilities for the following derivative instruments: (1) Index-based futures, (2) Index-based options, (3) Individual stock options and (4) Individual stock futures.

2.1.11.1 Self-check Exercise 2: What are derivatives?

2.1.12 SUMMARY

The trading mechanism of NSE has been discussed with respect to the capital market segment and Government Securities Market. The fully computerised trading system has created metamorphic change in the stock trading operations. The various entities involved in the stock market have been elaborated upon. The settlement cycles have been shorter and international level trading facilities are being provided by NSE.

2.1.13 GLOSSARY

a. **Forward contract:** A forward contract is a private, bilateral contract to exchange an asset, for cash, at a predetermined future date.

b. **Options:** Options are contracts that give the holder the right, but not the obligation, to buy or sell securities at a pre-determined price at the end of the

c. Future contract: They are standardised contracts between two counterparties to fix the terms of an exchange/lock-in the current price, of an exchange that will take place between them at some fixed future date.

2.1.14 QUESTIONS

1. Explain the process of clearing and settlement of securities.
2. Describe the trading mechanism in the Capital Market Segment.
3. Explain the different types of derivatives contracts.
4. Enlist the different entities in the trading system.
5. Explain the different types of orders.
6. Write short notes on:
 - A. Goods till Cancelled Order
 - B. Goods till Date Order
 - C. Immediate/Cancel order
 - D. Clearing member
 - E. Trading member

2.1.15 Answers to self-check exercise

self-check exercise1: Refer para 2.1.4

self-check exercise2: Refer para 2.1.7

2.1.16 Suggested Readings

- Investment Management - V.A. Avadhani
- Indian Financial System - Bharti V. Pathak

CLEARING AND SETTLEMENT

2.2.1 Objectives of the Lesson

2.2.2 Introduction

2.2.3 Meaning

2.2.4 Transaction and Settlement Cycle

2.2.5 Settlement Process

2.2.6 Settlement Agencies

2.2.7 Risk in Settlement

2.2.7.1 Self-check exercise1

2.2.8 Securities and Fund Settlement

2.2.9 Shortage Handling

2.2.10 Risk Containment

2.2.11 Dematerialisation and Electronic Transfer of Securities

2.2.11.1 Self-check exercise2

2.2.12 Investor Protection Fund

2.2.13 Summary

2.2.14 Glossary

2.2.15 Questions for Exercise

2.2.16 Suggested Readings

2.2.17 Answers to Self-check Exercises

2.2.1 Objectives of Lesson

- To understand the concept of settlement and the need
- To explain the process of settlement of securities and funds
- To know the various risks and electronic transfer

2.2.2 Introduction

Any transfer of financial instruments, such as stocks, in the primary or secondary markets involves 3 processes: execution, clearing and settlement. Execution is the transaction whereby the seller agrees to sell and

the buyer agrees to buy a security in a legally enforceable transaction. Clearing is the process of updating the accounts of the trading parties and arranging for the transfer of money and securities. Settlement is the actual exchange of money and securities between the parties of a trade on the settlement date after agreeing earlier on the trade. Most settlement of securities trading nowadays is done electronically. While the stock exchanges provide the platform for trading, the clearing corporation determines the funds and securities obligations of the trading members and ensures that the trade is settled through exchange of obligations. The clearing banks and the depositories provide the necessary interface between the custodians/clearing members for settlement of funds and securities obligations of trading members.

2.2.3 Meaning

Clearing: Clearing is the procedure by which an organization acts as an intermediary, and assumes the role of a buyer and seller in a transaction, to reconcile orders between transacting parties. Clearing is necessary for the matching of all buy and sell orders in the market. It provides smoother and more efficient markets as parties can make transfers to the clearing corporation rather than to each individual party with whom they transact.

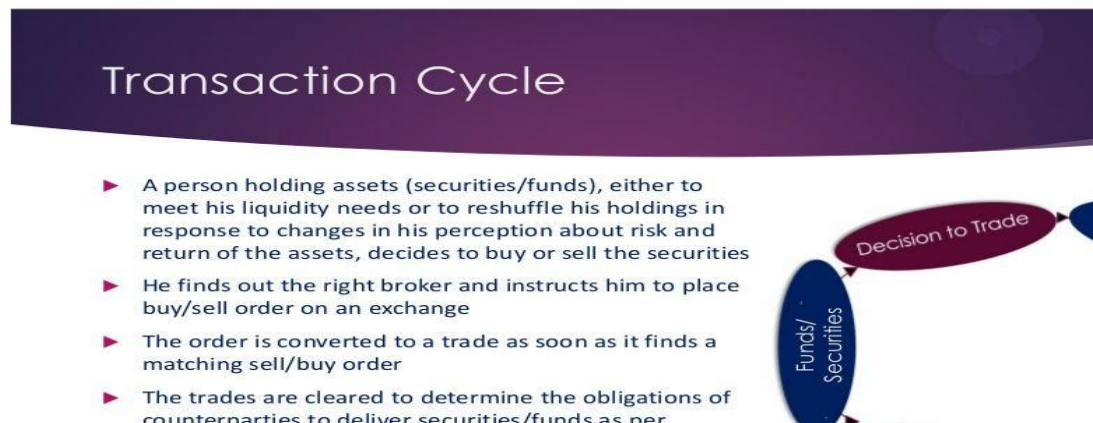
There are 2 types of clearing: bilateral clearing and central clearing. In bilateral clearing, the parties to the transaction undergo the steps legally necessary to settle the transaction. Central clearing uses a third-party usually a clearing house to clear trades. Clearing houses are generally used by the members who own a stake in the clearing house. Members are generally broker-dealers. Only members may directly use the services of the clearing house; retail customers and other brokerages gain access by having accounts with member firms.

An automated clearing house (ACH) is an electronic system used for the transfer of funds between entities, often referred to as an electronic funds transfer (EFT). The ACH performs the role of intermediary, processing the sending/receiving of validated funds between institutions.

Settlement of Transactions: This section covers transaction settlements, which is the date that ownership of a security changes from the seller to the buyer. It also refers to the date that the buyer must pay for and the seller must deliver the securities to the broker-dealer. Regular way transactions settle on the second business day after the trade date, which is referred to as T+2. Most securities, including stocks and corporate bonds, settle this way.

2.2.4 Transaction and Settlement Cycle

A transaction cycle is an interlocking set of business transactions. Most business transactions can be aggregated into a relatively small number of transaction cycles related to the sale of goods, payments to suppliers, payments to employees, and payments to lenders.



India is one of the most advanced markets when it comes to settlement of trade. The domestic market follows a T+2 settlement cycle. Rolling settlement is a system to settle share transactions in predefined number of days. It is a mechanism of settling trades done on a stock exchange on the Day of Trade (T) plus "X" trading days. "X" trading days could be any number of days like 1,2,3,4 or 5 days. So, if we say the rolling settlement for a transaction is T+3 then it means that the transaction will be settled in TODAY + Next 3 Days.

In Rolling Settlements, share trading done on each single day are settled separately from the trades done on earlier or subsequent trading days. In India, after April 1, 2002, all trades done on stock exchange are settled on T+3 bases. There could be some deviations because of Bank Closing or National Holidays. At NSE and BSE trades in rolling settlement are settled on a T+2 basis i.e. on the 2nd working day. Saturdays and Sundays are excluded because the stock exchanges remain closed on weekends.

Rolling Settlement Cycle for Normal Market			
	Activity	Day	Timings
Trading	Rolling Settlement Trading	T day	
Clearing	Download of obligation of members /custodians by NSCCL	T+1 days	By 1.30 pm
	Custodial Confirmation		
	Delivery Generation - Members receive obligations to be fulfilled		
Settlement	Members give instructions for paying - in of securities i.e. move securities in the settlement A/c of NSCCL	T+2 days	By 10.30 am
	Securities and Funds pay in		At 11.00 am
	Securities and Funds pay out		At 1.30 pm
	Valuation of shortages based on T+1 closing prices		By 2.30 pm
Post Settlement	Auction	T+3 days	
	Bad Delivery Reporting	T+4 days	
	Auction settlement	T+5 days	
	Rectified bad delivery pay-in and pay-out	T+6 days	
	Re-bad delivery reporting and pickup	T+8 days	
	Close out of re-bad delivery and funds pay-in & pay-out	T+9 days	

PAY-IN AND PAY-OUT

Pay-in day is the day when the securities sold are delivered to the exchange by the sellers and funds for the securities purchased are made available to the exchange by the buyers. Pay-out day is the day the securities purchased are delivered to the buyers and the funds for the securities sold are given to the sellers by the exchange. At present, the pay-in and pay-out happens on the 2nd working day after the trade is executed on the exchange. At present, the pay-in and pay-out happens on the 2nd working day after the trade is executed on the exchange that is settlement cycle is on T+2 rolling settlement.

NO-DELIVERY PERIOD

When a company announces a book closure or record date, the exchange sets up a no-delivery period for that security. During this period, only trading is permitted in the security. However, these trades are settled only after the no-delivery period is over. This is done to ensure that investor's entitlement for the corporate benefit is clearly determined.

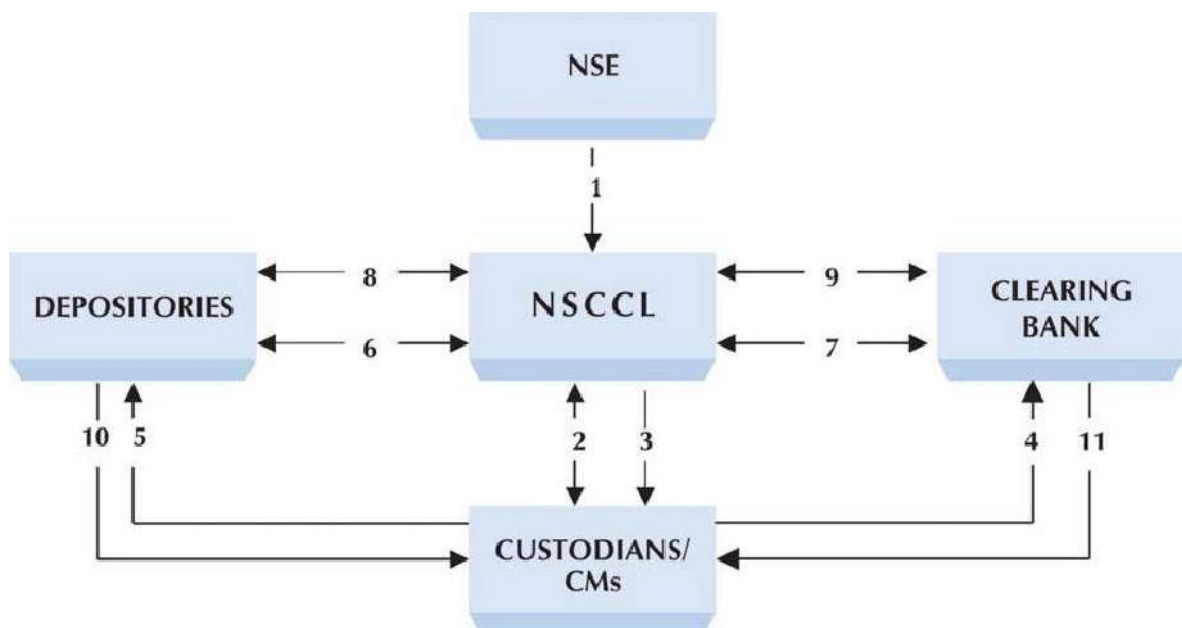
AN AUCTION

On account of non-delivery of securities by the trading member on the pay-in day, securities are put up for auction by the exchange. This ensures that buying trading member receives the securities. The Exchange purchases the requisite quantity in auction market and gives them to the buying trading member.

2.2.5 Settlement Process

The clearing process involves determination of what counter-parties owe, and which counter-parties are due to receive on the settlement date, thereafter the obligations are discharged by settlement. The clearing and settlement process comprises of three main activities- clearing, settlement and risk management. The clearing and settlement process for transactions in securities on NSE is presented in (Chart 2.2.4.a).

Chart 2.2.4.a: Clearing and Settlement Process at NSE



1. Trade details from Exchange to NSCCL (real-time and end of day trade file).
2. NSCCL notifies the consummated trade details to clearing members/custodians who affirm back. Based on the affirmation, NSCCL applies multilateral netting and determines obligations.
3. Download of obligation and pay-in advice of funds/securities.
4. Instructions to clearing banks to make funds available by pay-in time.
5. Instructions to depositories to make securities available by pay-in-time.
6. Pay-in of securities (NSCCL advises depository to debit pool account of custodians/CMs and credit its account and depository does it)
7. Pay-in of funds (NSCCL advises Clearing Banks to debit account of custodians/CMs and credit its account and clearing bank does it)

8. Pay-out of securities (NSCCL advises depository to credit pool account of custodians/CMs and debit its account and depository does it)
9. Pay-out of funds (NSCCL advises Clearing Banks to credit account of custodians/CMs and debit its account and clearing bank does it)
10. Depository informs custodians/CMs through DPs.
11. Clearing Banks inform custodians/CMs.

The core processes involved in clearing and settlement include:

- a. **Trade Recording:** The key details about the trades are recorded to provide basis for settlement. These details are automatically recorded in the electronic trading system of the exchanges.
- b. **Trade Confirmation:** The parties to a trade agree upon the terms of trade like security, quantity, price, and settlement date, but not the counterparty which is the NSCCL. The electronic system automatically generates confirmation by direct participants.
- c. **Determination of Obligation:** The next step is determination of what counter-parties owe, and what counterparties are due to receive on the settlement date. The NSCCL interposes itself as a central counterparty between the counterparties to trades and nets the positions so that a member has security wise net obligation to receive or deliver a security and has to either pay or receive funds. The settlement process begins as soon as members' obligations are determined through the clearing process. The settlement process is carried out by the Clearing Corporation with the help of clearing banks and depositories. The Clearing Corporation provides a major link between the clearing banks and the depositories. This link ensures actual movement of funds as well as securities on the prescribed pay-in and pay-out day.
- d. **Pay-in of Funds and Securities:** This requires members to bring in their funds/securities to the clearing corporation. The CMs make the securities available in designated accounts with the two depositories (CM pool account in the case of NSDL and designated settlement accounts in the case of CDSL). The depositories move the securities available in the pool accounts to the pool account of the clearing corporation. Likewise CMs with funds obligations make funds available in the designated accounts with clearing banks. The clearing corporation sends electronic instructions to the clearing banks to debit designated CMs' accounts to the extent of payment obligations. The banks process these instructions, debit accounts of CMs and credit accounts of the clearing corporation. This constitutes pay-in of funds and of securities.

e. **Pay-out of Funds and Securities:** After processing for shortages of funds/securities and arranging for movement of funds from surplus banks to deficit banks through RBI clearing, the clearing corporation sends electronic instructions to the depositories/clearing banks to release pay-out of securities/funds. The depositories and clearing banks debit accounts of the Clearing Corporation and credit accounts of CMs. This constitutes pay-out of funds and securities.

Settlement is deemed to be complete upon declaration and release of pay-out of funds and securities.

2.2.6 Settlement Agencies

Several entities, like the clearing corporation, clearing members, custodians, clearing banks, depositories are involved in the process of clearing and settlement. The role of each of these entities is explained below:

- **Clearing Corporation:** The clearing corporation is responsible for post-trade activities such as risk management and clearing and settlement of trades executed on a stock exchange. The first clearing corporation in the country to introduce settlement guarantee is the National Securities Clearing Corporation Ltd. (NSCCL), a wholly owned subsidiary of NSE. NSCCL was incorporated in August 1995. It was set up with the objectives of bringing and sustaining confidence in clearing and settlement of securities; promoting and maintaining short and consistent settlement cycles; providing counter-party risk guarantee, and operating a tight risk containment system.
- **Clearing Members:** Clearing Members are responsible for settling their obligations as determined by the clearing corporation. They do so by making available funds and/or securities in the designated accounts with clearing bank/ depositories on the date of settlement.
- **Custodians:** Custodians are clearing members but not trading members. They settle trade on behalf of trading members, when a particular trade is assigned to them for settlement. The custodian is required to confirm whether he is going to settle that trade or not. If he confirms to settle that trade, then clearing corporation assigns that particular obligation to him. As on date, there are 13 custodians empanelled with NSCCL. They are Deutsche Bank A.G., HDFC Bank Ltd., Hong Kong Shanghai Banking Corporation Ltd., Infrastructure leasing and Financial Services Ltd., ICICI Bank Ltd., Standard Chartered Bank Ltd., Stock Holding Corporation of

India Ltd. , Axis Bank Ltd., DBS bank Ltd., JP Morgan Chase Bank N.A., Kotak Mahindra Bank Ltd. State Bank of India and Citibank N.A and Orbis Financial Corporation Ltd.

- **Clearing Banks:** Clearing banks are a key link between the clearing members and Clearing Corporation to effect settlement of funds. Every clearing member is required to open a dedicated clearing account with one of the designated clearing banks. Based on the clearing member's obligation as determined through clearing, the clearing member makes funds available in the clearing account for the pay-in and receives funds in case of a pay-out. There are 13 clearing banks of NSE, viz., Axis Bank Ltd, Bank of India Ltd., Canara Bank Ltd., Citibank N.A, HSBC Ltd., HDFC Bank Ltd., ICICI Bank Ltd IDBI Bank Ltd., Indusind Bank Ltd., Kotak Mahindra Bank, Standard Chartered Bank, State Bank of India and Union Bank of India
- **Depositories:** Depository holds securities in dematerialized form for the investors in their beneficiary accounts. Each clearing member is required to maintain a clearing pool account with the depositories. He is required to make available the required securities in the designated account on settlement day. The depository runs an electronic file to transfer the securities from accounts of the custodians/clearing member to that of NSCCL and vice-versa as per the schedule of allocation of securities. The two depositories in India are the National Securities Depository Ltd (NSDL) and Central Depository Services (India) Ltd (CDSL).
- **Professional Clearing Member:** NSCCL admits special category of members known as professional clearing members (PCMs). PCMs may clear and settle trades executed for their clients (individuals, institutions etc.). In such cases, the functions and responsibilities of the PCM are similar to that of the custodians. PCMs also undertake clearing and settlement responsibilities of the trading members. The PCM in this case has no trading rights, but has clearing rights i.e. he clears the trades of his associate trading members and institutional clients.

2.2.7 Risks in Settlement

There are various types of financial risk like credit risk, market risk, operational risk and others which includes settlement risk

Settlement risk is the risk that a counterparty (or intermediary agent) fails to deliver a security or its value in cash as per agreement when the security was traded after the other counterparty or counterparties have already delivered security or cash value as per the trade agreement. The term covers factors

incidental to the settlement process which may suspend or prevent a trade from completing, even though the parties themselves are in agreement, are acting in good faith, and otherwise competent to perform.

The term applies only to risks inherent to the settlement method of a particular transaction. Broader risks of trading such as political risk or systemic risk may interrupt markets and prevent settlement, but these are not settlement risk.

One form of settlement risk is foreign exchange settlement risk or cross-currency settlement risk, sometimes called Herstatt risk after the German bank that made a famous example of the risk. On 26 June 1974, the bank's license was withdrawn by German regulators at the end of the banking day (4:30pm local time) because of a lack of income and capital to cover liabilities that were due. But some banks had undertaken foreign exchange transactions with Herstatt and had already paid Deutsche Mark to the bank during the day, believing they would receive US dollars later the same day in the US from Herstatt's US nostro. But after 3:30 pm in Germany and 10:30 am in New York, Herstatt stopped all dollar payments to counterparties, leaving the counterparties unable to collect their payment. The closing of Drexel Burnham Lambert in 1990 did not cause similar problems because the Bank of England had set up a special scheme which ensured that payments were completed. Barings in 1995 resulted in minor losses for counterparties in the foreign exchange market because of a specific complexity in the ECU clearing system.

Settlement risk may be mitigated through various techniques, including:

- Delivery versus payment.
- Settlement through clearing houses.
- Settling foreign exchange via a special-purpose entity, such as the CLS Group.

2.2.7.1 Self-check Exercise 1: Enlist the agencies involved in the settlement of trade.

2.2.8 Securities and Funds Settlement

Securities settlement

The secondary market trades in Government securities received by CCIL for clearing and settlement are from Negotiated Dealing System – Order Matching (NDS-OM), Clearcorp Repo Order Matching System (CROMS) and Negotiated Dealing System (NDS). The trades from NDS-OM and CROMS flow online whereas the trades from NDS are received in Batch mode. Batch I is received by CCIL from RBI after the closure of market hours for secondary market in Government securities transactions for T+0 settlements. Batch II is received by CCIL after the closure of market hours for T+1 settlement. The trades received by CCIL are

processed immediately for adequacy of margins and trades for which adequate margins are available are accepted for guaranteed settlement. The trades received for settlement includes outright and repo transactions and instruments for which clearing and settlement facilitated includes Treasury Bills, Central Government Securities, State Government Securities, STRIPS, when Issued instruments – both new issues and re-issues. The final obligation for securities pay-in is downloaded to the members and custodians on the T+1 day. The members / custodians make available the required securities in the settlement pool accounts with the depository participants on the pay-in day by 10.30 a.m. To facilitate this members are required to open pool accounts with depository participants of both the depositories, NSDL and CDSL.

Members are requested to take note of the following:

- The securities payout shall be after giving effect to any client direct payout instructions which may have been provided by clearing members for the respective security for the respective settlement. In the event of a failure of a client payout instruction at the depository, the payout shall be affected to the respective depository pool account.
- Members shall ensure that they get their account details updated in case of shifting/change of account etc to ensure that the payout happens to the preferred depository pool account.
- Members may avail the said facility by providing details in the form of a letter as enclosed in Annexure-I along with the client master report of the respective depository pool account. Also, the same letter has to be provided in case of closure of the said preferred depository pool account along with the client master report of the respective depository pool account.
- Members may take note that they shall continue to maintain pool accounts in both the depositories viz. NSDL and CDSL.

Fund Settlement

Funds settlement refers to the transfer of funds from buyer to seller and the transfer of an asset's title from seller to buyer.

HOW IT WORKS (EXAMPLE):

When an investor sends an order to his or her broker, that trade information is sent to a clearinghouse (for example, the National Securities Clearing Corporation). The clearinghouse processes and records the trade, and then issues a report to the broker/dealers involved that includes their net securities positions and the money to be settled among the parties.

The NSCC forwards settlement instructions to the Depository Trust & Clearing Corporation (DTCC), asking it to electronically transfer the ownership of the securities from the selling broker's account to the buying broker's account. The DTCC also transfers funds from the buying broker's bank account to the selling broker's bank account.

The brokerages then adjust their clients' accounts accordingly. The process is similar for institutional investors. For most stock trades, this takes three business days to occur. For option trades, fund settlement usually takes one business day.

Funds settlement also occurs for dividend payments. Foreign markets may have different settlement procedures or times to completion.

WHY IT MATTERS:

Funds settlement is an important "back-office" function, and the faster it occurs, the more it reduces market risk by ensuring that trades are executed properly. Fast funds settlement also increases investor confidence in the markets by ensuring that their trades are completed on time and that they won't lose their funds to bankrupt brokerage firms or intermediaries. It also requires participants to have the money in their accounts as their trades are made (or arrange for credit before the trade is placed)

2.2.9 Shortages Handling

Members are required to ensure that adequate funds are available in the clearing account towards all obligations, on the scheduled date and time. Trading and/or clearing facility of members failing to fulfill their funds obligations, in all markets including the valuation debit raised on account of securities shortages to Clearing Corporation, shall be withdrawn. Further, securities pay-out, due to such clearing member shall also be withheld. The above provisions apply if net cumulative fund shortage for a member is:

- Equal to or greater than Rs. Five (5) lakhs at the end of pay-in.
- Equal to or greater than Rs. Two (2) lakhs for six (6) or more occasions in the last three (3) months on any given day

In case, the member is disabled on account of (2) above, on making good the shortage amount, the member shall be permitted to trade subject to its providing a deposit equivalent to its cumulative funds shortage as the 'funds shortage collateral'. Such deposit shall be kept with the Clearing Corporation for a period of ten settlements and shall be released only if no further funds shortages are reported for the member in next ten consecutive settlements. Members may

further note that there shall not be any margin benefit or any interest payment on the amount so deposited as 'funds shortage collateral'. The amount may be provided by way of cash, fixed deposit receipts, or bank guarantee, equivalent to the cumulative funds shortage. Apart from the above, the member will be required to pay a penal charge on the amount outstanding at the end of the day, till the amount is recovered

Shortages Handling.

On the settlement day NSE clearing accepts pay-in of securities made by members through depositories and identifies the shortages. The members are debited by an amount equivalent to the securities not delivered and valued at a valuation price. This is known as valuation debit. For all such short deliveries NSE clearing conducts a buying-in auction on the T+2 day, after completion of the pay-out, through the NSE trading system. If the buy-in auction price is more than the valuation price, the CM is required to make good the difference. All shortages not bought-in are deemed closed out.

2.2.10 Risk Containment

A sound risk management system is integral to an efficient clearing and settlement system. NSE introduced for the first time in India, risk containment measures that were common internationally but were absent from the Indian securities markets.

Risk containment measures include capital adequacy requirements of members, monitoring of member performance and track record, stringent margin requirements, position limits based on capital, online monitoring of member positions and automatic disablement from trading when limits are breached, etc.

Capital Adequacy

The capital adequacy requirements stipulated by the NSE are substantially in excess of the minimum statutory requirements as also in comparison to those stipulated by other stock exchanges. Corporate seeking membership in the CM and F&O segment are required to have a net worth of Rs. 100 lakhs, and keep an interest free security deposit of Rs. 125 lakhs and collateral security deposit of Rs. 25 lakhs with the Exchange/NSCCL.

On-Line Monitoring

NSCCL has put in place an on-line monitoring and surveillance system, whereby 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 the NSCCL are alerted as per pre-set levels (reaching 70%, 85%, 90%, 95% and 100%) as and when the members

approach these limits. The system enables NSSCL to further check the micro-details of members' positions, if required and take pro-active action.

Off-line Surveillance Activity

Off-line surveillance activity consists of inspections and investigations. As per regulatory requirement, trading members are to be inspected in order to verify the level of compliance with various rules, byelaws and regulations of the Exchange. The inspection verifies if investor interests are being compromised in the conduct of business by the members.

Margin Requirements

NSSCL imposes stringent margin requirements as a part of its risk containment measures. The categorization of stocks for imposition of margins has the structure as given below;

The Stocks which have traded at least 80% of the days for the previous six months constitute the Group I and Group II. The remaining stocks are classified into Group III.

Close Out Facility

An online facility to close-out open positions of members in the capital market segment whose trading facility is withdrawn for any reason, has been provided with effect from June 13, 2007.

Settlement Guarantee Fund

The Settlement Guarantee Fund provides a cushion for any residual risk and operates like a self-insurance mechanism wherein members themselves contribute to the fund. In the event of a trading member failing to meet his settlement obligation, then the fund is utilized 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.

2.2.11 Dematerialisation and Electronic Transfer of Securities

In order to mitigate the risks associated with share trading in paper format, dematerialisation concept was introduced in Indian Financial Market. Dematerialisation or demat in short is the process through which an investor's physical share certificate gets converted to electronic format which is maintained in an account with the Participant. India adopted the demat System successfully and there are plans to facilitate trading of almost all financial assets

in demat format in future.

Dematerialisation is the process of converting physical shares into electronic format. An investor who wants to dematerialise his shares needs to open a demat account with Depository Participant. Investor surrenders his physical shares and in turn gets electronic shares in his demat account. Depository is the body which is responsible for storing and maintaining investor's securities in demat or electronic format. In India there are two depositories i.e. NSDL and CDSL.

Depository Participant (DP) is the market intermediary through which investors can avail the depository services. Depository Participant provides financial services and includes organizations like banks, brokers, custodians and financial institutions.

Advantages of Dematerialisation

- Demat format reduces the risk of bad deliveries
- Time and money is saved as you are not dealing in paper now. One need not go to the notary, broker to take delivery or submit the share certificate
- Liquidity is very high in case of demat format as whole process is automated.
- All the benefits of corporate action like bonus, stock split, rights etc are managed through the depository leading to elimination of transit losses
- Interest on loan against demat shares are less as compared to physical shares
- Investors save stamp duty while transferring shares in demat format.
- One needs to pay less brokerage in case of demat shares

Process of dematerialization

- Dematerialization starts with opening a demat account. For demat account opening, you need to shortlist a Depository Participant (DP) that offers demat services.
- To convert the physical shares into electronic/demat form, A Dematerialization Request Form (DRF), which is available with the DP, has to be filled in and deposited along with share certificates. On each share certificate, 'Surrendered for Dematerialization' needs to be mentioned.
- The DP needs to process this request along with the share certificates to the company and simultaneously to registrars and transfer agents through the depository

- Once the request is approved, the share certificates in the physical form will be destroyed and a confirmation of dematerialization will be sent to the depository
- The depository will then confirm the dematerialization of shares to the DP. Once this is done, a credit in the holding of shares will reflect in the investor's account electronically.
- This cycle takes about 15 to 30 days after the submission of dematerialization request
- Dematerialization is possible only with a demat account.

2.2.12 Investor Protection Fund

Investor Protection Fund (IPF) is set up by Inter-connected Stock Exchange (ISE) in accordance with the guidelines issued by the Ministry of Finance for investor protection, in order to compensate the claims of investors against the members of exchanges (brokers) who have defaulted or failed to pay. The investor can ask for the compensation if a member (broker) of the National Stock Exchange (NSE) or Bombay Stock Exchange (BSE) or any other stock exchange fails to pay the due money for the investments made. The Stock Exchanges have put certain limits on the level of compensation paid to the investors. This limitation has been put according to the discussions and guidance with the IPF Trust. The limit allows that the money to be paid as a compensation for a single claim shall not be less than INR 1 lakh – for the case of major Stock Exchanges like BSE and NSE – and it should not be less than INR 50,000 in case of other Stock exchanges.

2.2.12.1 Self-check Exercise 2: What are the benefits of dematerialisation?

2.2.13 Summary

Clearing and settlement are two buzz words in the secondary market and in banking sectors. They help in smooth flow of transactions without any delay. Clearing is the procedure by which an organization acts as an intermediary, and assumes the role of a buyer and seller in a transaction, to reconcile orders between transacting parties. Settlement is the actual exchange of money and securities between the parties of a trade on the settlement date after agreeing earlier on the trade. There is a small process through which transactions are cleared and settled. Clearing and settlement have also risks which are faced by users like default risk. In the secondary market, SEBI provides an investor protection fund for securing them. But at the last, by using dematerialisation accounts, clearing and settlement systems became less time-consuming without an error.

2.2.14 Glossary

- 1) Auction: public event where goods and property are sold.
- 2) Counterparty: other party to financial transactions.
- 3) RBI: Reserve Bank of India (central bank of India)
- 4) Collateral: side by side.
- 5) Capital adequacy: the statutory minimum reserves of capital which a bank or other financial institution must have available.
- 6) surveillance: close observation, especially of a suspected spy or criminal.

2.2.15 Questions for exercise

- 1) What is clearing and settlement?
- 2) What is the need of settlement in secondary market?
- 3) Explain the process of settlement.
- 4) What are the Various Agencies involved in settlement?
- 5) What do you understand from securities and fund settlement?
- 6) Explain the concept of Dematerialisation.
- 7) What is the risk in settlement and risk containment?
- 8) Explain Investor Protection Fund.
- 9) Write short notes on:
 - A. Investor Protection Fund
 - B. Depository Participant
 - C. Settlement Guarantee Fund
 - D. Custodians
 - E. Clearing Corporation

2.2.16 Suggested Readings

- Investment Management by V A Avadhani
- Indian Financial System by Bharti V Pathak
- Indian Financial system by Tata McGraw hill
- Financial Market Operation by Keith Dickinson

2.2.17 Answers to Self-check Exercises

Self-check Exercise 1: Refer para 2.2.6

Self-check Exercise 2: Refer para 2.2.11

BBA PART-III

PAPER : BBA-510

SEMESTER-V

STOCK MARKET OPERATIONS

LESSON NO. 2.3

AUTHOR : DR. RAJINDER KAUR

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2.3.1 Objectives of chapter

The motive of this chapter is to understand the depository system in India. It discusses the various participants under the depository system. The chapter also puts light on the Depository Act, 1996. Rights, duties of depositories are also discussed under this chapter.

2.3.2 Introduction of depository

A depository is an organisation which holds securities (like shares, debentures, bonds, government securities, mutual fund units etc.) of investors in electronic form at the request of the investors through a registered Depository Participant. It also provides services related to transactions in securities. (SEBI).

2.3.3 Definitions

•According to Section 2(e) of the Depositories Act, 1996, 'Depository means a company formed and registered under the Companies Act, 1956 and which has been granted a certificate of registration under section 12(1A) of the Securities and Exchange Board of India Act, 1992.'

•A depository is an organisation which holds securities of a shareholder in an electronic form and facilitates the transfer of ownership of securities on the settlement dates. (B.V.Pathak)

2.3.4 Objectives of a depository

The introduction of depository system will result in the elimination of all the problems connected with ownership, trading and transfer of securities. It plays a crucial role in Indian capital market. Depository system enables the capital market to achieve the following objectives:

1. It eliminates the occurrence of bad deliveries, forgery and duplicate share certificates.
2. It avoids delay in transfer of securities.
3. It enhances liquidity of securities by facilitating their easy transfer.
4. It substantially reduces the cost of transactions for the investor.
5. It enables surrender and withdrawal of securities from it with ease.
6. It maintains an accurate record of investors' holdings by keeping the details in electronic form.
7. It attracts foreign investors by complying with global standards.
8. It provides service infrastructure in a capital market.

2.3.5 What is dematerialisation?

Dematerialisation is the process by which physical certificates of an investor are converted to an equivalent number of securities in electronic form and credited into the BO's account with his DP.

2.3.5.1 What is an ISIN?

ISIN (International Securities Identification Number) is a unique 12 digit alphanumeric identification number allotted for a security (E.g.- INE383C01018). Equity-fully paid up, equity-partly paid up, equity with differential voting /dividend rights issued by the same issuer will have different ISINs. BRCM College of Business Administration Mrunal Joshi

2.3.5.2 Dematerialization Process

1. Stock exchange will notify through advertisement.
2. Open demat account with depository participant (DP).
3. Application in a DRF (Demat Request Form) along with share certificate: In order to dematerialise physical securities one has to fill in a DRF which is available with the DP and submit the same along with physical certificates that are to be dematerialised. Separate DRF has to be filled for each ISIN.

The complete process of dematerialisation is outlined below:

1. Surrender certificates for dematerialisation to your DP.
2. DP intimates to the Depository regarding the request through the system.
3. DP submits the certificates to the registrar of the Issuer Company.
4. Registrar confirms the dematerialisation request from depository.
5. After dematerialising the certificates, Registrar updates accounts and informs depository regarding completion of dematerialisation.
6. Depository updates its accounts and informs the DP.
7. DP updates the demat account of the investor.

2.3.5.3 Rematerialization Process

If one wishes to get back his securities in the physical form he has to fill in the RRF (Remat Request Form) and request his DP for rematerialisation of the balances in his securities account. The process of rematerialisation is outlined below:

- Make a request for rematerialisation.

- The depository participant intimates depository regarding the request through the system.
- Depository confirms rematerialisation request to the registrar.
- The registrar updates accounts and prints certificates.
- Depository updates accounts and downloads details to depository participant.
- Registrar dispatches certificates to investor

2.3.6 Benefits of Depository System

To Investors

1. Eliminate paper work and no physical movement of certificates.
2. Risk of bad deliveries, fraud and misplaced, mutilated and lost of share certificates will not Exist.
3. Shorten settlement time period and save and increase velocity.
4. Possible to change portfolio with more frequency.
5. Less cost.
6. Faster payment.

To Companies

1. Companies will be able to know the particulars of beneficial owners and their holding
2. No rush for transfer at the time of dividend or bonus.
3. Less number of investors complaints about signature difference, time lapse during the transfer and mutilated certificates
4. Possible to send notices and annual reports without delay

To Capital Market

1. More transparency in trading, clearing and settlement due to highly automated interlinked system.
2. Efficient back office due to highly atomized process.
2. Investors confidence improved.
3. Could invite foreign investors.
4. Increase in volume by both number and value.

5. Attract more number of retail and small investors directly or indirectly through mutual funds.

2.3.6.1 Self-check Exercise 1: What is rematerialisation?

2.3.7 Disadvantages of Depository System:

- (a) Number of frauds may be increased as there is no physical checking;
- (b) Practically, to set up a single depository is not possible;
- (c) MDS (Multiple Depository System) invites the problems of coordination.

Although the Depository System is not free from various problems, even then it is a boom to the world of capital market. It, no doubt, provides an efficient transfer system and helps the investors and the company in various forms. It overcomes the problems from bad delivery, counterfeit certificates, etc. It also reduces various cost and expenses (i.e. Registration cost).

2.3.8 Depository Participant (DP)

A Depository Participant (DP) is described as an Agent (law) of the depository. They are the intermediaries between the depository and the investors. The relationship between the DPs and the depository is governed by an agreement made between the two under the Depositories Act. In a strictly legal sense, a DP is an entity who is registered as such with SEBI under the sub section 1A of Section 12 of the SEBI Act. As per the provisions of this Act, a DP can offer depository-related services only after obtaining a certificate of registration from SEBI. As of 2012, there were 288 DPs of NSDL and 563 DPs of CDSL registered with SEBI.

SEBI (D&P) Regulations, 1996 prescribe a minimum net worth of Rs. 50 lakh for stockbrokers, R&T agents and non-banking finance companies (NBFC), for granting them a certificate of registration to act as DPs. If a stockbroker seeks to act as a DP in more than one depository, he should comply with the specified net worth criterion separately for each such depository. No minimum net worth criterion has been prescribed for other categories of DPs; however, depositories can fix a higher net worth criterion for their DPs.

2.3.9 Depositories Act, 1996

2.3.9.1. Short title, extent and commencement.

- (1) This Act may be called the Depositories Act, 1996.
- (2) It extends to the whole of India.
- (3) It shall be deemed to have come into force on the 20th day of September, 1995.

2.3.9.2. Definitions.

- (1) In this Act, unless the context otherwise requires,-
- (a) "beneficial owner" means a person whose name is recorded as such with a depository;
 - (b) "Board" means the Securities and Exchange Board of India established under section 3 of the Securities and Exchange Board of India Act, 1992 (15 of 1992);
 - (c) "bye-laws" means bye-laws made by a depository under section 26;
 - (d) "Company Law Board" means the Board of Company Law Administration constituted under section 10E of the Companies Act, 1956 (1 of 1956);
 - (e) "depository" means a company formed and registered under the Companies Act, 1956 (1 of 1956) and which has been granted a certificate of registration under sub-section (1A) of section 12 of the Securities and Exchange Board of India Act, 1992 (15 of 1992); (f) "issuer" means any person making an issue of securities;
 - (g) "participant" means a person registered as such under subsection (1A) of section 12 of the Securities and Exchange Board of India Act, 1992 (15 of 1992);
 - (h) "prescribed" means prescribed by rules made under this Act;
 - (i) "record" includes the records maintained in the form of books or stored in a computer or in such other form as may be determined by regulations;
 - (j) "registered owner" means a depository whose name is entered as such in the register of the issuer;
 - (k) "regulations" means the regulations made by the Board; 2 [(Ka) "Securities Appellate Tribunal" means a Securities Appellate Tribunal established under sub-section (1) of section 15K of the Securities and Exchange Board of India Act, 1992 (15 of 1992);]
 - (l) "security" means such security as may be specified by the Board;
 - (m) "service" means any service connected with recording of allotment of securities or transfer of ownership of securities in the record of a depository.
(2) Words and expressions used herein and not defined but defined in the Companies Act, 1956 (1 of 1956) or the Securities Contracts (Regulation) Act, 1956 (42 of 1956) or the Securities and Exchange Board of India Act, 1992,

(15 of 1992) shall have the meanings respectively assigned to them in those Acts.

2.3.9.3 CERTIFICATE OF COMMENCEMENT OF BUSINESS

Certificate of commencement of business by depositories.

- (1) No depository shall act as a depository unless it obtains a certificate of commencement of business from the Board.
- (2) A certificate granted under sub-section (1) shall be in such form as may be specified by the regulations.
- (3) The Board shall not grant it certificate under sub-section (1) unless it is satisfied that the depository has adequate systems and safeguards to prevent manipulation of records and transactions: Provided that no certificate shall be refused under this section unless the depository concerned has been given a reasonable opportunity of being heard.

2.3.9.4 RIGHTS AND OBLIGATIONS OF DEPOSITORIES, PARTICIPANTS, ISSUERS AND BENEFICIAL OWNERS

Agreement between depository and participant.

- (1) A depository shall enter into an agreement with one or more participants as its agent.
- (2) Every agreement under sub-section (1) shall be in such form as may be specified by the bye-laws.

Services of depository. Any person, through a participant, may enter into an agreement, in such form as may be specified by the bye-laws, with any depository for availing its services.

Surrender of certificate of security.

- (1) Any person who has entered into an agreement under section 5 shall surrender the certificate of security, for which he seeks to avail the services of a depository, to the issuer in such manner as may be specified by the regulations.
- (2) The issuer, on receipt of certificate of security under sub- section (1), shall cancel the certificate of security and substitute in its records the name of the depository as a registered owner in respect of that security and inform the depository accordingly.

- (3) A depository shall, on receipt of information under sub-section (2), enter the name of the person referred to in sub-section (1) in its records, as the beneficial owner.

Registration of transfer of securities with depository.

- (1) Every depository shall, on receipt of intimation from a participant, register the transfer of security in the name of the transferee.
- (2) If a beneficial owner or a transferee of any security seeks to have custody of such security, the depository shall inform the issuer accordingly.

Options to receive security certificate or hold securities with depository.

- (1) Every person subscribing to securities offered by an issuer shall have the option either to receive the security certificates or hold securities with a depository.
- (2) Where a person opts to hold a security with a depository, the issuer shall intimate such depository the details of allotment of the security, and on receipt of such information the depository shall enter in its records the name of the allottee as the beneficial owner of that security.

Securities in depositories to be in fungible form.

- (1) All securities held by a depository shall be dematerialised and shall be in a fungible form.

Rights of depositories and beneficial owner.

- (1) Notwithstanding anything contained in any other law for the time being in force, a depository shall be deemed to be the registered owner for the purposes of effecting transfer of ownership of security on behalf of a beneficial owner.
- (2) Save as otherwise provided in sub-section (1), the depository as a registered owner shall not have any voting rights or any other rights in respect of securities held by it.
- (3) The beneficial owner shall be entitled to all the rights and benefits and be subjected to all the liabilities in respect of his securities held by a depository.

Register of beneficial owner.

Every depository shall maintain a register and an index of beneficial owners .

Pledge or hypothecation of securities held in a depository.

- (1) Subject to such regulations and bye-laws, as may be made in this behalf, a beneficial owner may with the previous approval of the depository create a pledge or hypothecation in respect of a security owned by him through a depository.
- (2) Every beneficial owner shall give intimation of such pledge or hypothecation to the depository and such depository shall thereupon make entries in its records accordingly.
- (3) Any entry in the records of a depository under sub-section (2) shall be evidence of a pledge or hypothecation.

Furnishing of information and records by depository and issuer.

- (1) Every depository shall furnish to the issuer information about the transfer of securities in the name of beneficial owners at such intervals and in such manner as may be specified by the bye-laws. (2) Every issuer shall make available to the depository copies of the relevant records in respect of securities held by such depository.

Option to opt out in respect of any security.

- (1) If a beneficial owner seeks to opt out of a depository in respect of any security he shall inform the depository accordingly.
- (2) The depository shall on receipt of intimation under sub- section (1) make appropriate entries in its records and shall inform the issuer.
- (3) Every issuer shall, within thirty days of the receipt of intimation from the depository and on fulfillment of such conditions and on payment of such fees as may be specified by the regulations, issue the certificate of securities to the beneficial owner or the transferee, as the case may be.

Act 18 of 1891 to apply to depositories.

The Bankers' Books Evidence Act, 1891 shall apply in relation to a depository as if it were a bank as defined in section 2 of that Act.

Depositories to indemnify loss in certain cases.

- (1) Without prejudice to the provisions of any other law for the time being in force, any loss caused to the beneficial owner due to the negligence of the depository or the participant, the depository shall indemnify such beneficial owner.
- (2) Where the loss due to the negligence of the participant under sub-section (1) is indemnified by the depository, the depository shall have the right to recover the same from such participant.

Rights and obligations of depositories, etc.

- (1) Subject to the provisions of this Act, the rights and obligations of the depositories, participants and the issuers whose securities are dealt with by a depository shall be specified by the regulations. (2) The eligibility criteria for admission of securities into the depository shall be specified by the regulations.

2.3.9.5 ENQUIRY AND INSPECTION

Power of Board to call for information and enquiry.

- (1) The Board, on being satisfied that it is necessary in the public interest or in the interest of investors so to do, may, by order in writing,- (a) call upon any issuer, depository, participant or beneficial owner to furnish in writing such information relating to the securities held in a depository as it may require; or (b) authorise any person to make an enquiry or inspection in relation to the affairs of the issuer, beneficial owner, depository or participant, who shall submit a report of such enquiry or inspection to it within such period as may be specified in the order.
- (2) Every director, manager, partner, secretary, officer or employee of the depository or issuer or the participant or beneficial owner shall on demand produce before the person making the enquiry or inspection all information or such records and other documents in his custody having a bearing on the subject matter of such enquiry or inspection.

Power of Board to give directions in certain cases.

Save as provided in this Act, if after making or causing to be made an enquiry or inspection, the Board is satisfied that it is necessary-

- (i) in the interest of investors, or orderly development of securities market; or

- (ii) to prevent the affairs of any depository or participant being conducted in the manner detrimental to the interests of investors or securities market, it may issue such directions- (a) to any depository or participant or any person associated with the securities market; or (b) to any issuer, as may be appropriate in the interest of investors or the securities market.

2.3.9.6 Penalty for failure to furnish information, return, etc.

Any person, who is required under this Act or any rules or regulations or bye-laws made thereunder,-

(a) to furnish any information, document, books, returns or report to the Board, fails to furnish the same within the time specified therefor, he shall be liable to a penalty of one lakh rupees for each day during which such failure continues or one crore rupees, whichever is less for each such failure; (b) to file any return or furnish any information, books or other documents within the time specified therefor in the regulations or bye-laws, fails to file return or furnish the same within the time specified therefor, he shall be liable to a penalty of one lakh rupees for each day during which such failure continues or one crore rupees, whichever is less;

(c) to maintain books of account or records, fails to maintain the same, he shall be liable to a penalty of one lakh rupees for each day during which such failure continues or one crore rupees, whichever is less.

Offences.

- (1) Without prejudice to any award of penalty by the adjudicating officer under this Act, if any person contravenes or attempts to contravene or abets the contravention of the provisions of this Act or of any rules or regulations or bye-laws made thereunder, he shall be punishable with imprisonment for a term which may extend to ten years, or with fine, which may extend to twentyfive crore rupees, or with both.
- (2) If any person fails to pay the penalty imposed by the adjudicating officer or fails to comply with any of his directions or orders, he shall be punishable with imprisonment for a term which shall not be less than one month but which may extend to ten years, or with fine, which may extend to twenty-five crore rupees, or with both.

Offences by companies.

- (1) Where an offence under this Act has been committed by a company, every person who at the time the offence was committed was in charge of, and was responsible to, the company for the conduct of the business of the company,

as well as the company, shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly: Provided that nothing contained in this sub-section shall render any such person liable to any punishment provided in this Act, if he proves that the offence was committed without his knowledge or that he had exercised all due diligence to prevent the commission of such offence.

- (2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a company and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any neglect on the part of, any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly.

2.3.9.7 Self-check Exercise2:What are the benefits of the Depository system?

2.3.10 Summary

The depository is a very important constituent of the trading system. The rights and obligations of the depository have been discussed in this chapter. Dematerialisation is the first step to start trading.

2.3.11 Glossary

A. ISIN: ISIN (International Securities Identification Number) is a unique 12 digit alpha-numeric identification number allotted for a security.

B. Rematerialisation: It is convert the securities in the physical form.

C. Depository Participant: They are the intermediaries between the depository and the investors.

2.2.12 Answers to self-check exercises

Self-check Exercise1: Refer para 2.3.5.3

Self-check Exercise2: Refer para 2.3.6

2.2.13 Questions

- a. What is dematerialisation ?
- b. Explain the benefits of depository system.
- c. Explain Depository Act, 1996 in detail.
- d. Explain the rights and duties of depository participants.

2.2.14 Recommended Readings

- Investment Management by V A Avadhani
- Indian Financial System by Bharti V Pathak
- Indian Financial system by Tata McGraw hill

FUTURES MARKET OPERATIONS

- 2.4.1 Objectives
- 2.4.2 Introduction
- 2.4.3 Types of Derivatives
 - 2.4.3.1 Forward contracts
 - 2.4.3.2 Future contracts
 - 2.4.3.3 Difference between Forward and future contracts
- 2.4.4 Key Features of Futures Contracts
- 2.4.5 Types of Future contracts
 - 2.4.5.1 Equity futures
 - 2.4.5.2 Commodity futures (Storable commodities)
 - 2.4.5.3 Commodity Futures (Perishable commodities)
 - 2.4.5.4 Interest Rate Futures
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 - 2.4.7.1 Call Option
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2.4.1 Objectives of the lesson

After going through this lesson, students will be able to understand the concept and types of derivative contracts. The various types of futures and options contracts have been discussed in detail in this chapter.

2.4.2 Introduction

Future markets play an important role in the world of finance. Many kinds of futures instruments have been developed and the use of futures has received a great deal of attention. From the point of view of investors, particularly institutional investors, financial futures are very important. Futures contracts like options are important derivative instruments and a major innovation in the field of risk management.

2.4.3 Types of derivatives

Derivatives trading has become very popular among the investors as they offer many advantages to them. The most popular are the futures and forward contracts.

2.4.3.1 Forward Contracts

A forward contract is one bi-partite contract, to be performed in the future, at the terms decided today (for example, the forward currency market in India). Forward contracts offer tremendous flexibility to design the contract in terms of the price, quantity, quality (in case of commodities), delivery time and place. Forward contracts suffer from poor liquidity & default risk.

2.4.3.2 Future Contracts

Future contracts are organised/standardised contracts, traded on the regulated exchanges. These contracts are liquid in nature. Every future contract is a forward contract. They are entered into through an exchange, traded on exchange and a clearing corporation/house provides settlement guarantee for the trade. They have standard quantity, standard quality, standard time and place.

A forward is an agreement between two parties to exchange an asset for cash at a predetermined future date for a specified price. For example, if you agree on January 1 to buy 100 bales of cotton on July 1 at a price of 800 pabales from a cotton dealer, you have bought forward cotton or you are long forward cotton, whereas the cotton dealer has sold forward cotton and is a short forward cotton. It is the obligation of the buyer/seller to purchase/sell the forward on an agreed price.

2.4.3.3 Difference between Future and Forward Contract

1. Forward contracts are tailor-made contracts i.e. the terms are negotiated between the buyer and seller, whereas futures contracts are standardised i.e. quantity, date, time, quality and delivery conditions are standardised.
2. Forward contracts have no secondary market but futures contracts are traded on organised exchanges.

3. Forward contracts are usually and with deliveries. Whereas futures contracts are settled with the difference.
4. Usually no collateral is required for a forward contract. In a future contract however a margin is required.
5. Forwards contracts are settled on the maturity date, whereas futures contracts are 'marked to market' on a daily, basis means profits and losses on futures contracts are settled daily.

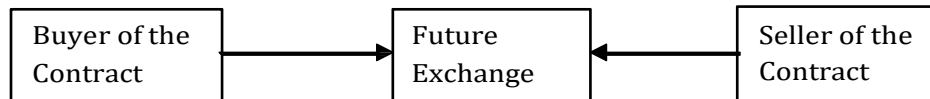
2.4.4 Key Features of Futures Contracts

Standardisation

Futures contracts are standardised in terms of quantity, quality and maturity date. The purpose of standardisation is to promote liquidity and allow the parties to the future contracts to close out their position readily.

Intermediation by the exchange

Exchange becomes Intermediary between buyer and seller.



The exchange becomes seller to the buyer and buyer to the seller of the contract. Exchange act as guarantor and also eliminates the credit risk.

Price Limit

Futures exchanges impose limits on price movements of futures contract. Price limits are meant to prevent panic buying or selling, triggered by rumours and to prevent overreaction to real information.

Marking to Market

Futures contracts are 'marked to market' on periodic basis. This means that profits & loss of futures contracts are settled on a periodic basis. For example :

Suppose on Monday morning you take a long position in a futures contract that matures on Friday afternoon, but is marked-to-market on a daily basis. The agreed upon price is, say, Rs. 100. At the close of trading on Monday, the future price rises to Rs. 105. Now the marking to market feature means that three things would occur. First you will receive a cash profit of Rs. 5. Second, the existing futures contract with a price of Rs. 100 would be cancelled. Third you will receive a new futures contract at Rs. 105. In essence, the marking to market feature implies that the value of the future contract is set to zero at the end of each trading day.

2.4.5 Types of Futures Contracts

There are several types of futures contracts prevailing in India some of these are discussed as below :

2.4.5.1 Equity Futures :

Equity futures are of true types

(i) Stock Index Futures

NSE & BSE have introduced stock index futures. NSE has a stock index futures contract based on S & P CNX Nifty Index : BSE has a stock index futures contracts based on Sensex.

Features of S& P CNX Nifty future contracts

- (a) These have a trading cycle for 3 months i.e. the near month (one), the next month (two) and the for month (three). A new contract will be introduced on the trading day following the expiry of the near month contract.
- (b) These contracts expire on the last Thursday of the expiry month. If the last Thursday is a trading holiday, the contracts shall expire on the previous trading day.
- (c) The permitted lot size is 200 and multiples thereof.

(ii) Futures on Individual Securities

Futures on individual securities were introduced in India in 200. NSE & BSE have introduced futures on individual securities.

Features

- * These contracts will have a maximum of 3 months trading cycle. New contracts will be introduced on the trading day following the expiry of the near month contract.
- * These contracts shall expires on the last Thursday of the expiry month. If the last Thursday is a trading holiday, the contracts shall expire on the previous day.
- * The price steps in respect of all futures contracts admitted to the dealings of the exchange shall be 0.05.
- * Future contracts on individual securities shall be initially cash settled and would be settle in the following manner : (i) Daily mark-to-market settlement and (ii) Final mark-to-market settlement on expiry of a futures contract.
- * The pay-in and pay-out of the mark-to-market settlement is on T+1 day (T = Trade day) premium.

2.4.5.2 Commodity Futures (Storable Commodities)

Futures contracts on various commodities, storable as well as perishable, like gold, oil, aluminium cotton, rice wheat and orange juice have been in existence for nearly three centuries.

For a storable commodity buying in the spot and storing it until the expiration of the

futures contract is equivalent to buying a futures contract and taking delivery at the maturity date.

If you buy a commodity in the future market, you gain on two counts : (i) you can earn interest on your money, as your payment is deferred (ii) you save on storage, insurance, and wastage costs as you don't have to store the commodity. As against these advantages, you have to forego the convenience of having the commodity readily on hand. For example, if you run out of your inventory of aluminium you can't replace it with aluminium futures.

Given the above advantages and disadvantages, one would expect the following relationship to hold for commodities.

$$\frac{\text{Future Price}}{(1 + \gamma_b)^T} = \text{spot price} + \text{Present value of shortage costs.}$$

Present value of convenience yield.

2.4.5.3 Commodity Futures (Perishable Commodities)

The futures price of a perishable commodity is influenced by two factors mainly (a) the expected spot price of the underlying commodity, and (b) the risk premium associated with the futures position.

- * If the spot price of the underlying commodity is expected to rise before the expiration of the futures contract, the future price will exceed the current spot price or vice-versa.
- * In a futures contract there is a buyer and a seller. Hence, the magnitude and the direction of the risk premium depends on whether the buyer is providing a service to seller or vice-versa.

In a futures contract where the buyer provides services to the seller, the buyer expects to be rewarded for bearing the risk. Thus, the futures prices will be lower than the expected spot price.

Future Price = Expected Spot Price – Expected risk premium.

This means that the price of the futures contract is expected to rise during its life as shown in part A of Exhibit 1. Such relationship is called normal backwardation.

In a futures contract where the seller provides service to the buyer, the seller expects to be rewarded for bearing the risk. Hence the futures price will be greater than the expected spot price.

Futures price = Expected spot price & Expected risk premium.

This means that the price of the futures contract is expected to rise during its life as shown in part B of Exhibit 1. Such relationship is called contango relationship. In a futures contract where buyers as well as seller are investors (or speculators), no group is providing service or receiving service. This is true of most modern commodity

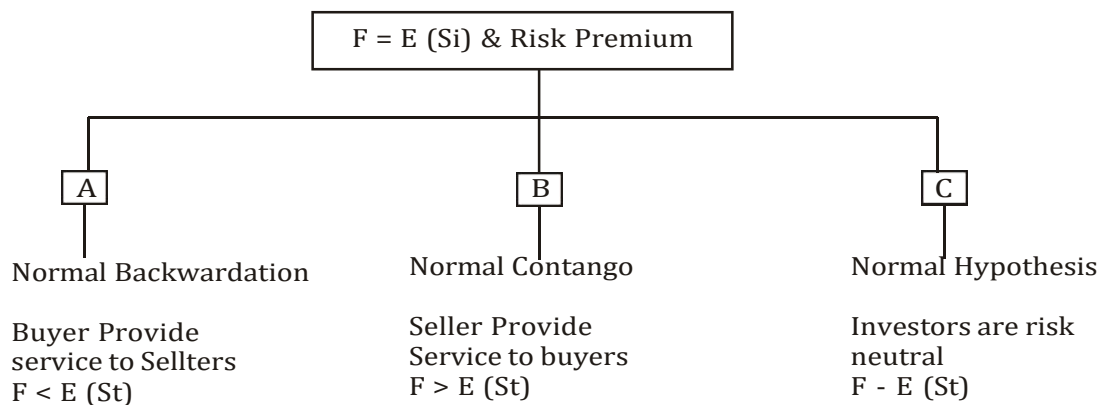
futures contracts. In this case, there will be no risk premium and hence the futures price would be equal to the expected spot price.

Futures price = Expected spot price.

This means that the price of the future contract is expected to remain stationary throughout its life.

This is shown in Part C of Exhibit 1.

Exhibit 1 Future on Perishable Commodities.



2.4.5.4 Interest rate Futures

The interest rate risk has to be borne by both the borrowers and lenders of funds. Borrowers lose from a rise in the futures interest rate, while lenders lose when interest rates tend to fall in future. Since both these players would like to minimise the risk component of their activities, the derivative contracts provide an opportunity to fix the desired interest rate for the future. Short term interest rate futures, which frequently take the form of three month interest rate futures, are suitable for hedging such risks.

2.4.5.5 Currency Futures

A currency futures contract enables the exchange of a standard amount of a particular currency on a specific future date, at a fixed exchange rate. Currency futures have the advantages of tradability. A contract can be closed and (cancelled) by buying a sold future or selling a future contract that was bought earlier. Thus there is cancellation of the earlier contract and only the price differential exchanges hands.

2.4.6 Options

An option gives its owner the right to buy or sell an underlying asset on or before a

given date at a fixed price. For example, one may enjoy the option to buy a certain apartment on or any time before December 31 of the current year at a price of Rs. 3 million. There can be as many different option contracts as the number of items to buy or sell. Stock options, commodity options, foreign exchange options and interest rate options are traded on and off organised exchanges across the globe.

The most popular model for pricing options is the Black. Scholes model, which was published in 1973, the year in which the Chicago Board of options Exchange (CBOE), the first organised options exchange in the world, was also set.

Terminology of Options

- * The option to buy is a call option and the option to sell is a put option.
- * The option holder is the buyer of the option and option writer is the seller of the option.
- * The fixed price at which the option holder can buy and/or sell the underlying assets is called the exercise price or striking price.
- * The date when the option expires or matures is known as the expiration date or maturity date. After the expiration date, the option is worthless.
- * The act of buying or selling the underlying asset as per the option contract is called exercising the option.
- * Options traded on an exchange are called exchange traded options and options not traded on an exchange are called over-the-counter options.

2.4.6.1 Self-check Exercise 1: Name the different types of futures contracts.

2.4.7 Types of Options

There are two basic types of options :

2.4.7.1 Call Option

A call option gives the holder the right to buy the underlying asset by a certain date for a certain price.

2.4.7.2 Put Option

A put option gives the holder the right to sell the underlying asset by a certain date for a certain price.

- * The price in the contract is known as exercise prices or strike price.
- * The asset on which the put or call option is created is referred to as the underlying asset.
- * The date in the contract is known as expiration date or maturity.

Depending on when an option can be exercised, it is classified in one of the following two categories.

(i) European Option

When an option is allowed to be exercised only on maturity date, it is called a European option.

2.4.7.3 American Option

When the option can be exercised any time before its maturity, is called an American option.

Option holder exercises his right when it provides him a benefit over the buying or selling the underlying asset from the market at the prevailing price.

There are 3 possibilities :

(i) In The Money

A put or a call option said to be in the money when it is advantageous for the investor to exercise it.

In the case of in the money call option.

Exercise Price $<$ Current value of Underlying Asset
In the case of in the money put option

Exercise Price $>$ Current value of Underlying Asset

(ii) Out of the money

A put or call option is out of the money. If it is not advantageous for the investor to exercise.

In the case of the out of the money call option.

Exercise Price $>$ Current value of Underlying Asset

In the case of out of the money put option

Exercise Price $<$ Current value of Underlying Asset

(iii) At the Money

When the holder of a put or a call option does not lose or gain whether or not exercise his option, the option is said to be at the money.

Options do not come free. They have cost. The option premium is the price that the holder of an option has to pay for obtaining a call or put option. The price will generally have to be paid in advance, whether or not the holder exercises his option.

I. CALL OPTION

A call option on a share is a right to buy the share at an agreed exercise price.

Example

- Thus you should exercise call option when share price at expiration $>$ exercise price.

$$S_t > E$$

- Do not exercise call option when share price at expiration \leq exercise price.

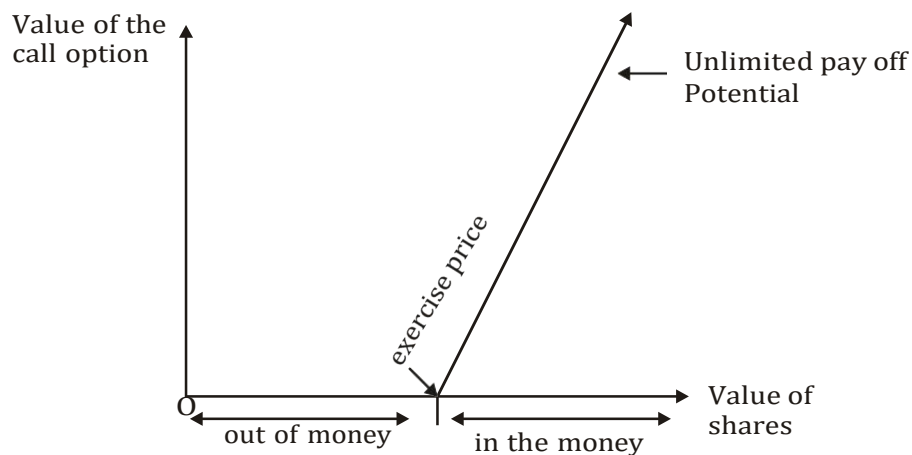
$$S_t \leq E$$

$$\therefore \text{The value of call option at expiration} = \text{Max} \left[\begin{array}{l} \text{Share Price} - \text{Exercise Price} \\ 0 \end{array} \right]$$

The value of call option can never be less than zero.

$$C_t = \text{Max} [S_t - E, 0]$$

2.4.7.4 Pay-off of a call option Buyer

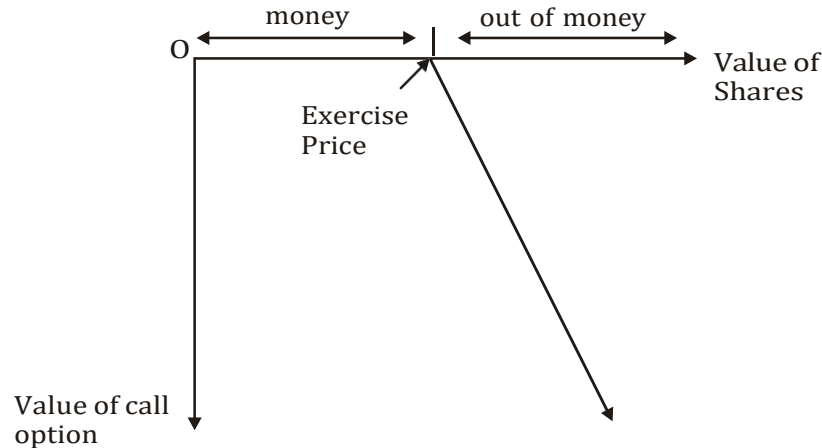


- * It may be noted that call buyer's potential pay-off is unlimited once the price of the share goes beyond the exercise price.
- * If the share price is equal to or below the exercise price, the call buyer will not exercise his option.

Thus, his pay-off will be zero since the option is worth nothing.

2.4.7.5 Pay-off of a call option writer

However, the option writer of a call option affected as the value of underlying asset changes ?



- * Figure shows, the call buyer's gain is call seller's loss. The seller of call option will not incur any loss when the price of share is less than exercise price, since buyer will not exercise his option.
- * However if the share price rises and goes beyond the E, the potential loss is very high.

2.4.7.6 Call Premium

- * A call buyer exercises his right only when the outcomes are favourable to him. The seller of a call option, being the owner of Asset, gives away the good outcomes in favour of option buyer.
- * The buyer of a call option must, therefore, pay-up-front a price called option premium, to the call seller to buy the option. The call premium is the cost to the option buyer and a gain to the call seller.
What is the net pay off of the buyer and the seller of a call option when a call premium is included ?
- * Suppose that the current share Price = 130 you expect that price in a 3 month period will go up to Rs. 150.
- * But you do fear that the price may also fall below Rs. 130.
- * To reduce the chance of your risk. You can buy a 3 month call option at exercise price = Rs. 125.
[Ignoring the option premium, taxes, transaction costs]
- * You will exercise your option if you get share for Rs. 130 by paying an exercise price of Rs. 125.

You will gain Rs. 5

$$S_t - E$$

Pay-off = 130-125

or value of

call option = 5

in the money

- * What would you do if the price of share was Rs. 120, you will gain nothing option is worthless, out of money.

Example

Option Buyer

- * The share of Telco is selling for Rs. 104.
- * Radhey Acraya buys a 3 month call option at a premium of Rs. 5.
- * The exercise price is Rs. 105.
- * What is Radhey's pay off if the share price is Rs. 100 or Rs. 105, 110, 115, 120 at the time of option is exercised ?

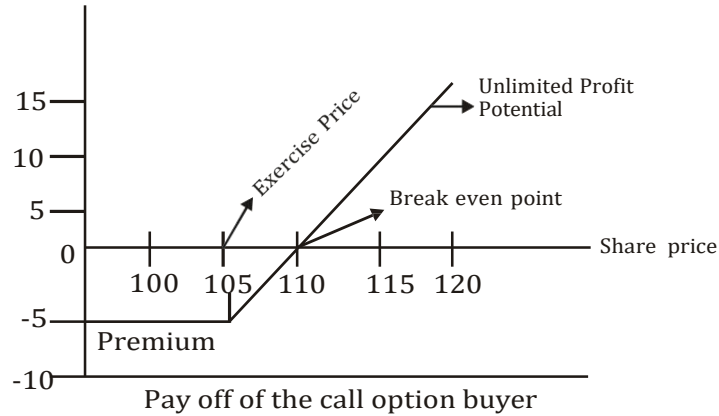
Solution :

The call option Holder's Pay-off at expiration.

	Rs.	Rs.	Rs.	Rs.	Rs.
Share Price S_t	100	105	110	115	120
Buyer's inflow :					
Sale of share	-	-	110	115	120
Buyer's Outflow :					
Exercise option	-	-	105	105	105
Call premium	5	5	5	5	5
Net pay off	-5	-5	0	+5	+10

Break-Even-Point

- * Radhey will exercise his option at any price above the exercise price Rs. 105.



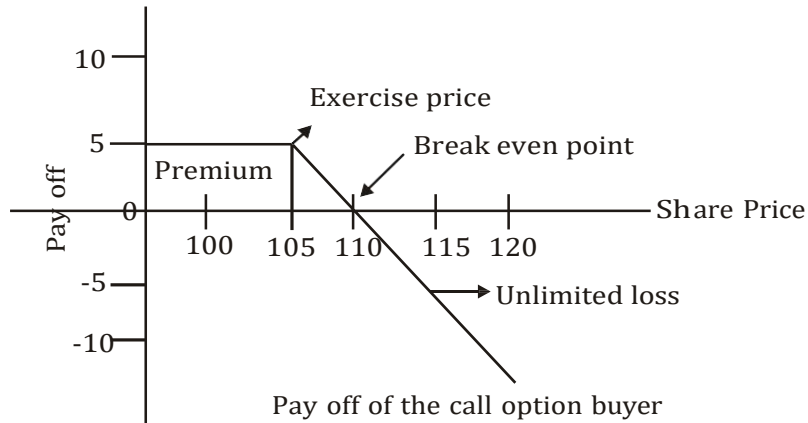
Option Seller

Pay-off of the seller of the call option

The position of the call option seller will be opposite that of buyer. If the buyer exercises his option, the seller will lose. His potential loss is very high & his profit is limited is Rs. 5 (call premium).

The call option seller's pay-off at expiration

	Rs.	Rs.	Rs.	Rs.	Rs.
Share Price	100	105	110	115	120
Seller's inflow :					
Exercise Price	-	-	105	105	105
Call premium	5	5	5	5	5
Seller's Outflow :					
Share price	-	-	110	115	120
Net pay off	5	5	0	+5	+10



2.4.8 Put Option

A put option is a contract that gives the holder a right to sell a specified share at an agreed price on or before a given maturity period.

Suppose you expect price of A Ltd. share fall in near future. Therefore, you buy a 3 months put option at an exercise price (E) of Rs. 50.

Current Market price is 48. If the price actually fall to (S_t) Rs. 35 after 3 months, you will exercise your option. You will buy share for Rs. 35 from the market & deliver it to bid-option writer to receive Rs. 50. Your gain is Rs. 15, ignoring the put option premium.

You will forgo your option if the share price rises above the exercise price, the put option is worthless for you and its value is zero. A put buyer gains when the share price falls below the exercise price.

* Thus, you should exercise put option when.

Exercise Price > Shares price at expiration.

$$E > S_t$$

* Do not exercise the put option when.

Exercise price \leq Share price at expiration.

$$E \leq S_t$$

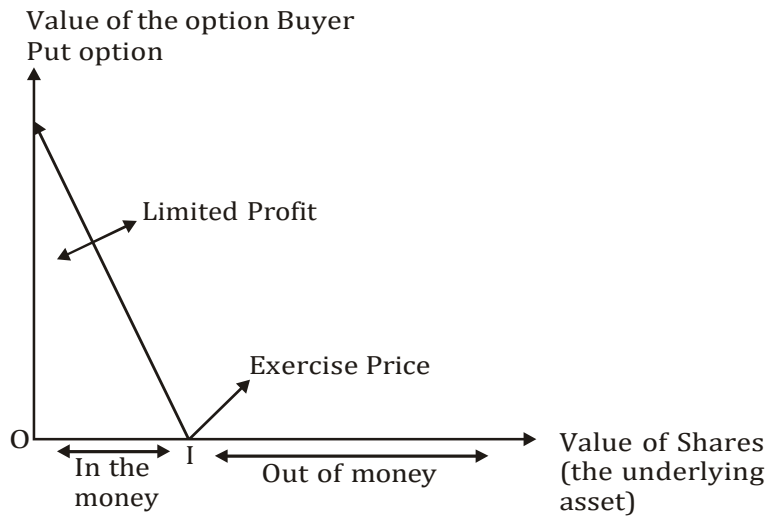
Value of put option at expiration = $\text{Max} [E - S_t, 0]$

2.4.8.1 Value of Put Option Buyer

* The value of put option buyer depends on the value of the underlying asset.

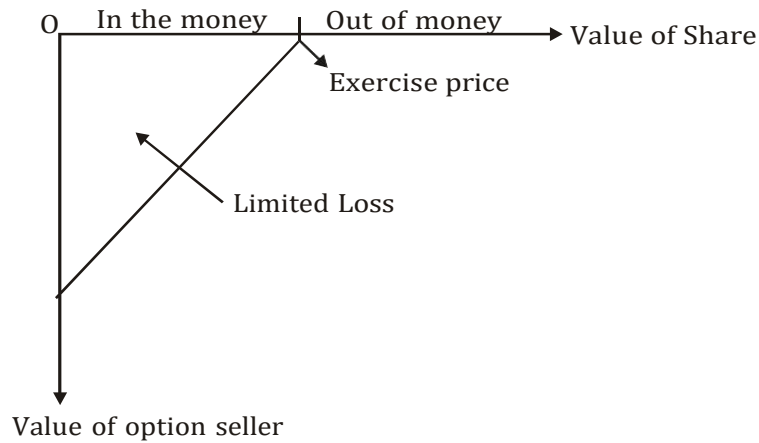
* The value of put option is zero, when it is out of money.

- * The potential profit of put option buyer is limited. Since the share price cannot fall below zero.



2.4.8.2 Value of Put Option Seller

The put option buyer's gain is the seller's loss. The potential loss of the put-option seller is limited to the exercise price.



Example

An investor hopes that the price of BHEL's share will fall after 3 months. Therefore, he purchases a put option on BHEL's share with a maturity of 3 months at a premium of Rs. 5.

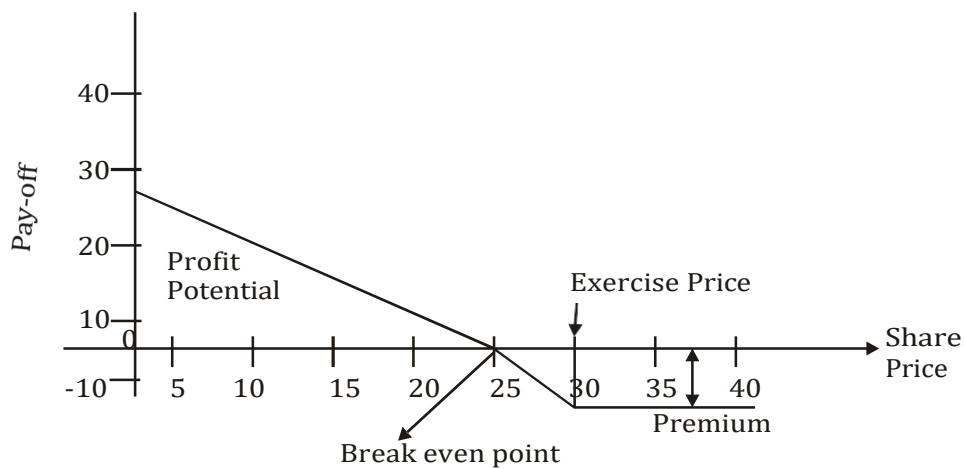
- * Exercise Price = Rs. 30
- * Current market Price = Rs. 28

How much will be profit or loss of the put buyer and put seller if the price of the share at the time of the maturity of the option turns out to be Rs. 18, Rs. 25, Rs. 28, Rs. 30, Ex. Rs. 40.

Put Option Buyer

Pay-off of Put option Buyer

	Rs.	Rs.	Rs.	Rs.	Rs.
Share Price	18	25	28	30	40
Buyer's inflow					
Exercise option	30	30	30	-	-
Buyer's Outflow					
* Premium	5	5	5	5	5
* Buy Shares	18	25	28	-	-
Net Pay off (Profit)	.7	0	-3	-5	5

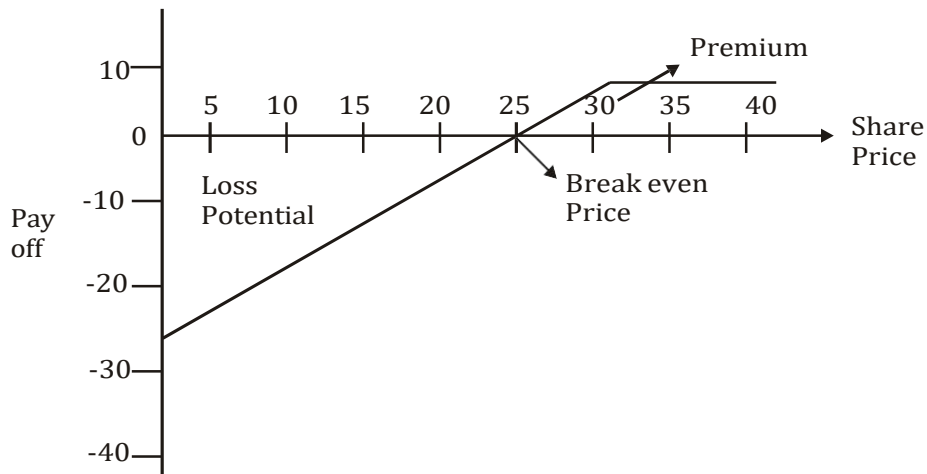


Put Option Seller

For the seller of a put option, the profit will be limited to Rs. 5 i.e. the amount of premium. His loss potential depends on the price of shares. But it can not exceed Rs. 25, that is the difference between [E-Premium].

The Put option seller's pay-off.

	Rs.	Rs.	Rs.	Rs.	Rs.
Share Price (St)	18	25	28	30	40
Seller's Inflow :					
- Premium	5	5	5	5	5
- Sale Share	18	25	28	-	-
Seller's Outflow					
- Exercise Option	30	30	30	-	-
Net Pay off	-7	0	3	5	5



2.4.8.3 Protective Put

Share of a put

A long position involve buying and holding the shares to benefit from capital

gain and dividends. An investor may create a long position in the shares of a firm. A long position investment strategy is risky. The Investors will in our loss if the share price declines.

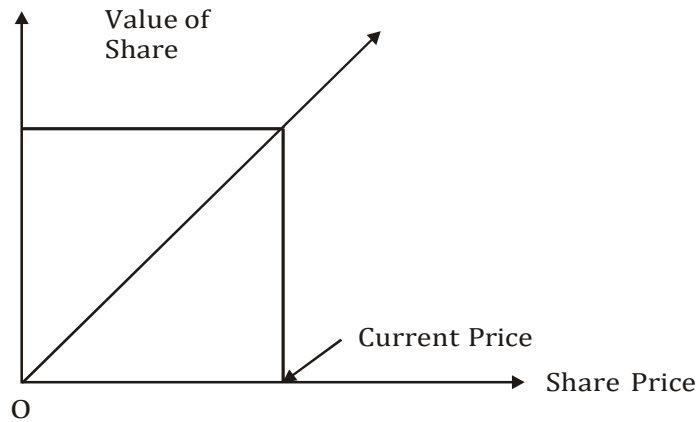


Figure shows the investor's long position in the shares. He will gain if share price rises in the future. However, he will income loss when prices lower down.

An investor can, guard himself against the risk of loss in the share value by purchasing put option that has the exercise price equal current market price of share.

Put option at the money is called protective put. The combination of long position in the share and protective put helps to avoid the investor's risk when the price falls.

Example

Suppose the current price share and the exercise. Price is to be Rs. 100 & possible shares prices at expiration Rs. 90 and Rs. 110.

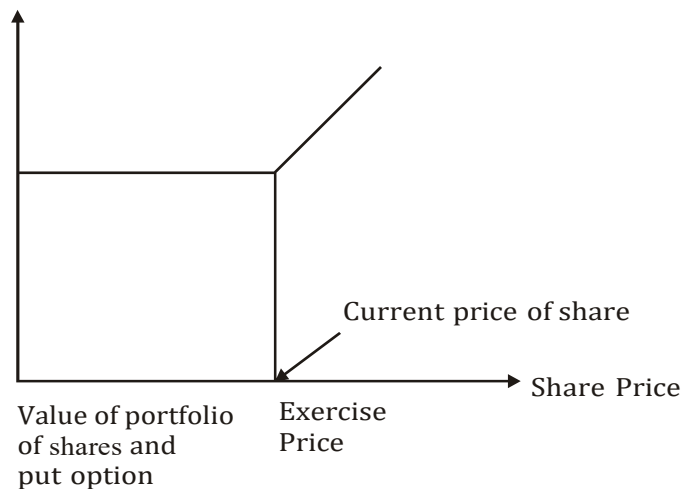
Pay off of a Portfolio of a share & Put option.

	Situation - I Share Price = 110 Exercise Price = 1090	Situation-II Share Price = 90
	St > E Pay off	St < E Pay off
Value of Shares	St 110	St 90
+ value of put	0 +0	(E-St) 10
Total Value	St 110	St + (E-St) = E 100

Explanation

If the price of a share increases, the investor gains and the value of his portfolio at expiration will be equal to the share price. The value of put to him will be zero since he will not exercise his option. On the other hand, if the share price falls, the value of investor's portfolio will be equal to the share price & value of put option. Since the put was at the money when the investor sold it.

Figure: Value of Share Put



2.4.9 Equity Options in India

There are two popular types of equity options : index options and options on individual securities.

(i) Index Options :

These are options on stock market indices. The most popular index options in India is the options on the S & P CNX Nifty which is traded on the NSE. The salient features of this option contract are as follow :

- * The contract size is 200 times (or multiples thereof) the underlying index viz. S & P CNX Nifty.
- * It is a European style option contract.
- * The options contracts have a maximum of three month trading cycle, the near month (one), the next month (two) and the for month (three). A new contract will be introduced on the next trading day, following the

expiry of near month contract.

- * The expiry day is the last Thursday of the expiry month or the previous trading day if the last Thursday is a trading holiday.
- * The contract is cash settled. The settlement is done a day after the expiry day based on the expiration price as may be decided by the exchange.

2.4.9.1 Options on Individual Securities

These are introduced by NSE & BSE. The features of such options are as follows:

- * Trading cycle of such options is 3 months. New contracts will be introduced on the trading day following the expiry of the near month contract. On expiry of the near month contract, a new contract shall be introduced a new strike prices for both call and put options. On the trading day following the expiry of the near month contract.
- * These shall expire on the last Thursday of the expiry month. If the last Thursday is a trading holiday, the contract shall expire on the previous day.
- * The value of the option contracts shall not be less than Rs. 2,00,000 at the time of introduction.
- * The lot size shall be in multiples of 100 and fraction, if any, shall be rounded off to the next higher multiple of 100.
- * The price steps in respect of all option contracts admitted to dealings in the exchange shall be 0.05.
- * Base price of the options contracts on introduction of new contracts shall be the theoretical value of the options contract arrived at based on Black-Scholes model calculation of option premium. The base price of the contracts on subsequent trading days will be the daily close price of the option contracts.
- * Settlement of exercise of options on securities will be by payment in cash and not by delivery of securities at least initially, in accordance with SEBI guidelines. The settlement is on T + 3 day.

2.4.9.2 Self-check Exercise 2: Name the different types of options.

2.4.10 Summary

Futures markets are an important component of derivatives trade. They have inherent advantages and are regulated. Call and put options are also traded widely globally.

2.4.11 Glossary

A. At the Money Option: When the holder of a put or a call option does not lose or gain whether or not exercise his option, the option is said to be at the money.

B. Commodity Futures: Futures contracts on various commodities, storable as well as perishable, like gold, oil, aluminium, cotton, rice, wheat and orange juice.

C. Call option: A call option on a share is a right to buy the share at an agreed exercise price.

D.Put Option:A put option is a contract that gives the holder a right to sell a specified share at an agreed price on or before a given maturity period.

E.European option:When an option is allowed to be exercised only on maturity date, it is called a European option.

F.American Option:When the option can be exercised any time before its maturity, is called an American option.

2.4.12Answers to Self-check Exercises

Self-check Exercise1:Refer para 2.4.5

Self-check Exercise2:Refer para 2.4.7

2.4.13Questions

1. What are options ? Explain various types of options.
2. Discuss key features of Futures Contracts.
3. Differentiate between Forward Contract and Future Contract.
4. Explain the different types of futures contracts.
5. Explain the different types of options contracts.
6. Write short notes on:
 - A. Index option
 - B. European option
 - C. Call premium
 - D. Interest rate futures
 - E. At the money option

2.4.14 Recommended Readings

- Investment Management - V.A. Avadhani
- Indian Financial System - Bharti V. Pathak

Mandatory Student Feedback Form

<https://forms.gle/KS5CLhvpwrpgjwN98>

Note: Students, kindly click this google form link, and fill this feedback form once.