CHAPTER 4
FUNCTIONING OF EQUITY DERIVATIVES MARKET IN INDIA

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4.1 Introduction:

In this chapter the researcher has tried to cover various aspects of functioning of the equity derivatives market in India. There are various products permitted to be offered by SEBI since it opened the equity derivatives market for trading in 2000. The exchanges have introduced these products from time to time in order to offer variety of products to the market. Besides this, the exchanges also put in place the robust clearing and settlement system to ensure that the market functions smoothly without any glitches and without any major setbacks. This has also helped the derivatives market to flourish and also evolve in its own manner over a period of time by making the naïve Indian investors understand the market and its nuances. This chapter is based on the various guidelines and circulars issued by SEBI and Exchanges, namely NSE and BSE, from time to time governing the functioning of the equity derivatives market in India in line with the SEBI guidelines and requirements.

4.2 Product Specifications for Introduction in the Equity Derivatives Market:

As per SEBI, with the intention to discourage small investors from participating in the market the minimum contract size for all derivative contracts was specified as Rs. 2 lakh at the time of introduction of the contract in the market. Even today, it is specified by SEBI that a derivative contract should have a contract value of not less than Rs. 2 Lakhs at the time of its introduction in the market. However, the mini derivative contracts on Index (Sensex and Nifty) were allowed to have a minimum contract size of Rs. 1 lakh at the time of its introduction in the market.

The index futures contracts can have a maximum maturity of 12 months and Monthly maturities from 1 to 12 months can be available on these index futures contracts. Initially, the Index options were allowed for the maximum maturity period of upto 12 months. Now, the index option contracts on Nifty
and SENSEX can have a maximum maturity up to 5 years. The exchanges need to ensure that for index options contracts on Nifty and Sensex there are 8 semiannual contracts of the cycle June/December in sequence to 3 serial monthly contracts and 3 quarterly contracts of the cycle March/June/September/December. Each maturity needs to have a minimum of three strikes (in the money, at the money and out of the money). These index futures and options contracts are premium styled index options.

Single Stock Futures and option contracts have the maturity of three months and three contracts of maturity of one-month, two-month and three-month are required to be introduced simultaneously. Therefore, at any point in time at least three Single Stock Futures contracts on a particular underlying are available for trading or minimum of three strikes (in the money, at the money and out of the money). “In case of Stock Futures, the Stock Exchanges have the flexibility to offer:

i. Cash settlement (settlement by payment of differences) for both stock options and stock futures; or

ii. Physical settlement (settlement by delivery of underlying stock) for both stock options and stock futures; or

iii. Cash settlement for stock options and physical settlement for stock futures; or

iv. Physical settlement for stock options and cash settlement for stock futures.

Stock Exchange can introduce physical settlement in a phased manner. On introduction, however, SEBI stipulated that the physical settlement for all stock options and/or all stock futures must be completed within six months. The settlement mechanism can be decided by the Stock Exchanges in consultation with the Depositories. On expiry / exercise of physically settled stock derivatives, the risk management framework (i.e., margins and default) of the cash segment are applicable.”

Settlements of cash and equity derivative segments are required to continue to remain separate.

4.3 Eligibility Criteria Stipulated by SEBI for various Derivatives Products:

SEBI has stipulated broad criteria for allowing the derivative contracts on Stocks, Benchmark indices, Sectoral indices and Foreign indices. The criteria set by SEBI at the time of introduction of these derivatives contracts has
also evolved over a period of time. Effort is also made to bring out these changes while elaborating the current eligibility criteria applicable for inclusion of Stocks, Benchmark Indices, Sectoral Indices and Foreign Indices under equity derivatives segment of the exchanges.

4.3.1 Eligibility Criteria for Stocks in Equity Derivatives

At the time when stock options were allowed, the Indian markets had just witnessed acute market turbulence. The eligibility criterion was designed so that the list of stocks remained small, where the threat of manipulation was considered to be low and volatility is less. “Accordingly, the following criteria was specified by SEBI –

i. The stock should be among the top 200 scrips on the basis of average market capitalization during the last 6 months. The average free float market capitalization should not be less than Rs 750 crores.

ii. The stock should be among the top 200 scrips on the basis of average daily volume (in value terms) during the last 6 months. The average daily volume should not be less than Rs 5 crore in the underlying cash market.

iii. The stock should be traded on at least 90% of the trading day in the last 6 months with the exception of case in which a stock is unable to trade due to corporate actions like demergers etc.

iv. Non promoter holding in the company should be at least 30%.

v. The ratio of the daily volatility of the stock vis-à-vis the daily volatility of the index (either BSE – 30 Sensex or S& P CNX Nifty) should not be more than 4 at any time during the previous 6 months. The volatility for this purpose will be as per the EWMA formula as specified in the J.R.Varma Committee report. Stock on which option contracts are permitted in one exchange will also be permitted on other derivative exchange.”

“The volatility calculation for the above is based on the last one and a half year closing price data in the following manner:

- The standard deviation of logarithmic return (natural log) is calculated for the first six months.
- The above standard deviation has to be the sigma (t-1) for the first day of the next one year period. Then the EWMA formula given in the J.R.Varma Committee Report is used for that entire one year.
- The above calculation is done for individual stock and index.
- The sigma (t) calculated as above for individual stock and index is used to compute the ratio of the scrip volatility vis-à-vis the index volatility each day during the last six month period.

The closing prices used for the above calculations are required to be normalized for corporate actions like bonus, stock splits, demergers, etc. Further, at the end of six months from the date of introduction of trading in stock options, it was required to be verified whether the stocks on which options is permitted continues to comply with the aforementioned criterion. The eligibility criterion was required to be reviewed after a period of six months to examine whether in light of the experience the list of eligible stocks could be expanded.³

Subsequently, the aforementioned eligibility criterion was reviewed by SEBI in 2004 and SEBI laid down only broad eligibility criteria and the Exchanges were given free hand to decide on the stocks and indices on which futures and options could be permitted. The new broad eligibility criteria focused on the issues of risk containment. At the same time, the eligibility criterion was designed to include a wider range of stocks on which derivative contracts could be traded.

Today in 2012, the eligibility criteria have undergone noticeable change. A stock on which stock option and single stock future contracts are proposed to be introduced by the Exchanges need to conform to the following broad eligibility criteria:-

i. “The stock should be chosen from amongst the top 500 stock in terms of average daily market capitalization and average daily traded value in the previous six months on a rolling basis.

ii. The stock’s median quarter-sigma order size over the last six months should not be less than Rs.5 Lakhs. For this purpose, a stock’s quarter-sigma order size means the order size (in value terms) required to cause a change in the stock price equal to one-quarter of a standard deviation.

iii. The market wide position limit in the stock should not be less than Rs.100 crores. Since market wide position limit for a stock is computed at the end
of every month, the Exchange should ensure that stocks comply with this criterion before introduction of new contracts. Further, the market wide position limit in terms of number of shares should be valued taking the closing prices of stocks in the underlying cash market on the date of expiry of contract in the month.”

SEBI also specified that in case circuit filter on a stock is reduced even once during the past six months, on account of surveillance action, then such stocks should undergo a cooling off period of six months before the exchange decides to introduce derivatives on it.

The number of eligible stocks varies from month to month depending upon the changes in quarter sigma order sizes, average daily market capitalization & average daily traded value calculated every month on a rolling basis for the past six months. Options and futures can be introduced on new stocks when they meet the eligibility criteria subject to SEBI approval.

“As specified by SEBI, the Exchanges were guided by the following for the purpose of calculating the quarter sigma order size in the underlying stock:

- Quarter sigma order size should be calculated by taking four snapshots in a day from the order book of the stock in the past six months. These four snapshots should be randomly chosen from within four fixed ten-minutes windows spread through the day.

- The sigma (standard deviation) or volatility estimate should be the daily closing volatility estimate which is also used for day end initial margin calculation in derivative contracts on a stock. For stocks on which derivative contracts are not traded, the daily closing volatility estimate should be computed in the manner specified by Prof. J. R. Varma Committee on risk containment measures for Index Futures. The daily closing volatility estimate value should be applied to the day’s order book snapshots to compute quarter sigma order size.

- The quarter sigma percentage should be applied to the average of the best bid and offer price in the order book snapshot to compute the order size to move price of the stock by quarter sigma.

- The median order size to cause quarter sigma price movement should be determined separately for the buy side and the sell side. The average of the
median order size for the buy and the sell side should be taken as the median quarter sigma order size.

The details of calculation methodology and relevant data are also required to be made available to the public at large on the website of the exchange.

SEBI stipulated that the quarter sigma order size in a stock should be calculated on the 15th of each month, on a rolling basis, considering the order book snapshots in the previous six months. Similarly, the average daily market capitalization and the average daily traded value should also be computed on the 15th of each month, on a rolling basis, to arrive at the list of top 500 stocks.

SEBI even though has specified that a derivative contract should have a value of not less than Rs. 2 Lakhs at the time of its introduction in the market. The lot sizes for stock derivative contracts have been standardized as given under:

<table>
<thead>
<tr>
<th>Price Bands (Rs.)</th>
<th>Contract Size</th>
<th>Lot Size/ Multiplier</th>
<th>Value (in Rs. lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,601 and above</td>
<td></td>
<td>125</td>
<td>Greater than 2 lakhs</td>
</tr>
<tr>
<td>801 to 1600</td>
<td></td>
<td>250</td>
<td>Between 2 lakhs and 4 lakhs</td>
</tr>
<tr>
<td>401 to 800</td>
<td></td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>201 to 400</td>
<td></td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>101 to 200</td>
<td></td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>51 to 100</td>
<td></td>
<td>4,000</td>
<td></td>
</tr>
<tr>
<td>25 to 50</td>
<td></td>
<td>8,000</td>
<td></td>
</tr>
<tr>
<td>Less than 25</td>
<td></td>
<td>A multiple of 1000</td>
<td></td>
</tr>
</tbody>
</table>

Source: Compiled from SEBI Circular

The Stock Exchanges are also required to review the lot size once in every 6 months based on the average of the closing price of the underlying for last one month and revise the lot size, wherever required, by giving an advance notice of at least 2 weeks to the market. If the revised lot size is higher than the existing one, it would be effective for only new contracts. In case of corporate action, the revision in lot size of existing contracts should be carried out as stipulated by SEBI in this regard. The Stock Exchanges are also required to ensure that the lot size is same for an underlying traded across Exchanges."
Thus, the standardized contract size makes the contracts costly, i.e. the contract size value becomes large, when the price of the underlying stock is near the end value of the price bands mentioned above. Thus, largely the contracts in the stocks are in the range of value of Rs. 2 lacs to Rs. 4 lacs.

4.3.2 Eligibility Criteria for Benchmark Indices and various Sectoral Indices in Equity Derivatives

As per initial criteria set by SEBI, derivatives contracts on a new stock index was permitted only if the stocks contributing 90% weightage in the index are individually eligible for derivative trading as per the eligibility criteria. This requirement was also required to be applied only at the time of introduction of derivative contract on new indices.

SEBI in July, 2004 modified the eligibility criteria for launching derivatives on indices and the new eligibility criteria applied is as under:

- “The Exchange should consider introducing derivative contracts on an index, if weightage of constituent stocks of the index, which are individually eligible for derivative trading, is at least 80%. Further, no single ineligible stock in the index shall have a weightage of more than 5% in the index.

- The eligibility criterion for indices was also made into a requirement of continuous eligibility criteria. It was specified that the index on which futures and options contracts are permitted are required to comply with the eligibility criteria on a continuous basis. The Exchanges should also check whether the index continues to meet the aforesaid eligibility criteria on a monthly basis. If the index fails to meet the eligibility criteria for three consecutive months, then no fresh contract should be issued on that index. However, the existing unexpired contracts should be permitted to trade till expiry and new strikes can also be introduced in the existing contracts.”

In 2012, the same stipulation of SEBI continues to hold good prescribing the eligibility criteria for inclusion/exclusion of Benchmark Indices and various Sectoral Indices in Equity Derivatives segment of for trading on the exchanges.
4.3.3 Eligibility Criteria Derivative Contracts on Foreign Indices:

SEBI vide its circular CIR/DNPD/2/2011 dated January 11, 2011, permitted derivatives contracts on foreign stock indices as per the eligibility criteria set by SEBI. The eligibility criteria set by SEBI vide this circular is as given hereunder.

“Stock exchanges can introduce derivatives on a foreign stock index if:

a. Derivatives on that Index is available on any of the stock exchanges listed in table given below:

<table>
<thead>
<tr>
<th>S No.</th>
<th>Exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Americas</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>BM&amp;FBOVESPA</td>
</tr>
<tr>
<td>2.</td>
<td>Chicago Board Options Exchange (CBOE)</td>
</tr>
<tr>
<td>3.</td>
<td>CME Group</td>
</tr>
<tr>
<td>4.</td>
<td>ICE Futures U.S.</td>
</tr>
<tr>
<td>5.</td>
<td>International Securities Exchange (ISE)</td>
</tr>
<tr>
<td>6.</td>
<td>MexDer</td>
</tr>
<tr>
<td>7.</td>
<td>Montréal Exchange</td>
</tr>
<tr>
<td>8.</td>
<td>NASDAQ OMX PHLX</td>
</tr>
<tr>
<td><strong>Asia Pacific</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Australian Securities Exchange</td>
</tr>
<tr>
<td>2.</td>
<td>Bursa Malaysia</td>
</tr>
<tr>
<td>3.</td>
<td>Hong Kong Exchanges</td>
</tr>
<tr>
<td>4.</td>
<td>Korea Exchange</td>
</tr>
<tr>
<td>5.</td>
<td>Osaka Securities Exchange</td>
</tr>
<tr>
<td>6.</td>
<td>Singapore Exchange</td>
</tr>
<tr>
<td>7.</td>
<td>TAIFEX</td>
</tr>
<tr>
<td>8.</td>
<td>Tokyo Stock Exchange Group</td>
</tr>
<tr>
<td><strong>Europe, Africa, Middle East</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Borsa Italiana</td>
</tr>
<tr>
<td>2.</td>
<td>Eurex</td>
</tr>
<tr>
<td>3.</td>
<td>Johannesburg SE</td>
</tr>
<tr>
<td>4.</td>
<td>MEFF</td>
</tr>
<tr>
<td>5.</td>
<td>NASDAQ OMX Nordic Exchange</td>
</tr>
<tr>
<td>6.</td>
<td>NYSE Liffe (European markets)</td>
</tr>
<tr>
<td>7.</td>
<td>Oslo Børs</td>
</tr>
<tr>
<td>8.</td>
<td>Tel Aviv SE</td>
</tr>
</tbody>
</table>

b. In terms of trading volumes (number of contracts), derivatives on that Index figure among the top 15 Index derivatives globally

OR

That Index has a market capitalization of at least USD 100 billion.

c. That index is “broad based”. An Index is broad based if:
   i. The Index consists of a minimum of 10 constituent stocks and
   ii. No single constituent stock has more than 25% of the weight, computed in terms of free float market capitalization, in the Index.

SEBI also specified that after introduction of derivatives on a particular stock index, if that stock index fails to meet any of the eligibility criteria for three months consecutively, no fresh contract should be introduced on that Index. However, the existing unexpired contracts can be traded till expiry and new strikes can be introduced on those contracts.

Trading in derivatives on Foreign Stock Indices is restricted to residents in India. The absolute numerical value of the underlying foreign stock index is required to be denominated in Indian Rupees (INR). The derivatives contracts on that foreign stock index are required to be denominated traded and settled in Indian rupees. The stock exchanges are also required to submit the risk management framework along with its application for introduction of derivatives on foreign stock indices.

Besides, this the stock exchange are also required to ensure compliance with any other legal provisions relating to introduction of derivatives on foreign stock indices and obtain requisite approvals from the concerned regulatory bodies of respective countries.

The stock exchanges also need to ensure that the material price sensitive information and information relating to regulatory actions and corporate actions relating to constituent stocks of the foreign stock index, as available in public domain, are made available to Indian investors also.

The position limits for the Trading Member/Mutual Funds (higher of Rs. 500 crore or 15% of the total open interest in Index derivatives) as well as the disclosure requirement for clients whose position exceed 15% of the open interest of the market, as applicable to domestic stock index derivatives, are also applicable to derivatives on foreign stock indices."
Thus, with this stipulation SEBI allowed the trading in the foreign indices on the Indian Equity derivatives exchanges. There has been since then some foreign stock indices which are traded on the Indian equity derivatives exchanges. The Indian Indices also on the similar lines are traded on the foreign equity derivatives exchanges.

4.3.4 Eligibility Criteria for Re-introduction of Derivatives Contracts on the Company Undergoing Restructuring due to Corporate Actions:

Besides, regular eligibility criteria required for Stocks to be eligible for equity derivatives trading, SEBI has also stipulated the additional criteria for stocks undergoing any corporate action to be eligible for re-introduction in the equity derivatives segment.

“As stipulated by SEBI, in the case of shares of a company undergoing restructuring through any means are required to satisfy the following conditions in order to be eligible for re-introduction of derivatives contracts on that company from the first day of listing of the post restructured company’s stock in the underlying market:

a. the futures and options contracts on the stock of the original pre-restructured company should have been traded on any exchange prior to its restructuring;
b. the pre restructured company had a market capitalization of at least Rs.1000 crores prior to its restructuring;
c. the post restructured company would be treated like a new stock, if it is likely to be at least one-third the size of the pre restructuring company in terms of revenues, or assets, or (where appropriate) analyst valuations; and
d. the scheme of restructuring does not suggest that the post restructured company would have any characteristic (for example extremely low free float) that would render the company ineligible for derivatives trading,

If the above conditions are satisfied, then the exchange can take the following course of action in dealing with the existing derivative contracts on the pre-restructured company and introduction of fresh contracts on the post restructured company:
a. In the contract month in which the post restructured company begins to trade, the Exchange would be required to introduce near month, middle month and far month derivative contracts on the stock of the restructured company.

b. In subsequent contract months, the normal rules for entry and exit of stocks in terms of eligibility requirements would apply. If these tests are not met, the exchange would not permit further derivative contracts on this stock and future month series would not be introduced.8

### 4.3.5 Liquidity Enhancement Schemes for Illiquid Securities in Equity Derivatives Segment

SEBI vide its circular dated June 2, 2011 allowed Stock Exchanges to introduce one or more liquidity enhancement schemes (LES) to enhance liquidity of illiquid securities in their equity derivatives segments subject to certain conditions such as the Exchanges should prescribe and monitor the obligations of liquidity enhancers (liquidity provider, market maker, maker-taker or by whatever name called), scheme should not compromise market integrity or risk management, it complies with all the relevant laws and the scheme is disclosed to market at least 15 days in advance and its outcome (incentives granted and volume achieved – liquidity enhancer wise and security wise) is disseminated monthly within a week from the close of the month.

“SEBI allowed the Exchanges to introduce the Liquidity Enhancement Schemes on securities meeting any of the following criterions:

a. New securities permitted on the Stock Exchange after June 02, 2011,
b. Securities in case of a new Stock Exchange / new Segment, and
c. Securities where the average trading volume for the last 60 trading days on the Stock Exchange is less than 0.1% of market capitalization of the underlying.

SEBI also advised to discontinue the schemes as soon as the average trading volume on the Stock Exchange, during the previous 60 trading days reaches 1% of market capitalization of the underlying, or six months from introduction of the scheme, whichever is earlier.
The incentives under LES are allowed in the form of discount in fees, adjustment in fees in other segments, cash payment or in the form of shares, including options and warrants, of the Stock Exchange.

SEBI specified that if a Stock Exchange chooses to distribute the incentives in the form of discount in fees, adjustment in fees in other segments, cash payment under LES then the incentives under all LES, during a financial year, should not exceed 25% of the net profits or 25% of the free reserves of the Stock Exchange, whichever is higher, as per the audited financial statements of the preceding financial year. However, SEBI specified that if a Stock Exchange chooses to distribute incentives in the form of shares, including options and warrants, of the Stock Exchange then the shares, including the shares that may accrue on exercise of warrants or options, given as incentives under all LES, during a financial year, should not exceed 25% of the issued and outstanding shares of the Stock Exchange as on the last day of the preceding financial year.9

In the equity derivatives segment pursuant to SEBI guidelines, it is only BSE who has launched a series of Liquidity Enhancement Incentive Programmes (LEIPS) with the goal of creating lasting, self-sustaining liquidity in BSE’s Futures & Options Segment.

BSE has so far till November 30, 2012 launched seven Liquidity Enhancement Incentive Programmes. BSE monitors performance of the programme including presence of Market Makers and their compliance with the quote obligations through a mix of online and offline monitoring tools.

“The first programme in the series LEIPS-I (BETA) was launched by BSE on 28th September 2011 with a view to get the members ready for the actual programme. The LEIPS-I (BETA) was successfully concluded by BSE on 25th October 2011. Immediately, the second programme in the series LEIPS-II was launched on 26th October, 2011. The programme focused on Futures on SENSEX, its underlying 30 stocks and BANKEX. LEIPS-II was successfully concluded by BSE on 25th April, 2012. Subsequently, BSE launched its third programme in the series LEIPS-III on 1st February, 2012. The programme focused on Options on SENSEX Index. The programme was successfully concluded by BSE on 31st July, 2012. The fourth programme in the series LEIPS-IV
was launched by BSE on 02 May, 2012. The programme focused on Futures on SENSEX till 01 November, 2012 and Futures on BANKEX till 21 June, 2012. The programme was successfully concluded by BSE on 01 November, 2012.

The fifth programme in the series LEIPS-V was launched by BSE on August 1, 2012 with a view to infuse greater impetus and focused on participation in developing Single Stock Futures contract on 8 underlying securities viz. State Bank of India, Reliance Industries Limited, ICICI Bank Limited, TATA Steel Limited, TATA Motors Limited, Infosys Technologies Limited, Larsen & Toubro Limited & Axis Bank Limited. The programme incentives were by payment of cash for their participation.

The sixth programme in the series LEIPS-VI was launched by BSE on August 1, 2012 with a view to infuse greater impetus and focused on participation in developing the Futures & Options Contracts on BSE-100 Index where the programme incentives were by payment of cash for the participation in the programme. LEIPS-VI envisages the Market Makers to have a continuous quoting obligation with specified size and spread in Futures & Options Contracts on BSE-100 Index. The programme offers 4 types of incentives to market participants like trading volume based daily cash incentives, Quote based incentives in Index Options, Open Interest (OI) based cash incentives paid on daily basis for average daily OI and lower transaction fees for all active trading members.

The seventh programme in the series LEIPS-VII was launched by BSE on 29th October 2012. The programme focuses on options contracts on BSE SENSEX Index and incentives are given by payment of cash for the participation as per terms & conditions prescribed by the Exchange. LEIPS-VII envisages the Market Makers to have a continuous quoting obligation with specified size and spread in Options Contracts on BSE SENSEX Index. The programme offers 4 types of incentives to market participants like trading volume based daily cash incentives, Quote based incentives in Index Options, Open Interest (OI) based cash incentives paid on daily basis for average daily OI and lower transaction fees for all active trading members.
As can be seen from the trading volume and contracts data of BSE’s equity derivatives segment analysed in the earlier chapter, BSE’s volume has significantly increased since the launch of the Liquidity Enhancement Incentive Programmes.

4.3.6 Corporate Action Adjustments:

SEBI had initially in June 2001 stipulated the guidelines for adjustments to be made in the equity derivatives market based on various corporate actions. Options on common Stocks trade on both NSE & BSE and hence SEBI advised that the corporate adjustment for the Option on the same underlying has to be uniform across markets. For this purpose, SEBI also advised exchanges to constitute a group comprising NSE, BSE and other knowledgeable persons, which would decide a uniform course of action for adjusting stock option contracts on corporate actions, taking into account best practices followed internationally. Certain standard adjustments for Corporate Actions for Stock Options are also stipulated by SEBI.

“The adjustments for Corporate Actions for Stock Options currently in 2012 are as follows:

a. The basis for any adjustment for corporate action would be required to be such that the value of the position of the market participants on cum and ex-date for corporate action should continue to remain the same as far as possible. This facilitates in retaining the relative status of positions viz. in-the-money, at-the-money and out-of-money. This also addresses the issues related to exercise and assignments.

b. Any adjustment for corporate actions is required to be carried out on the last day on which a security is traded on a cum-basis in the underlying cash market.

c. Adjustments means modifications to positions and/or contract specifications as listed below such that the basic premise of adjustment laid down in (a) above is satisfied:

i. Strike Price
ii. Position
iii. Market Lot/Multiplier
The adjustments are required to be carried out on any or all of the above based on the nature of the corporate action. The adjustments for corporate actions are carried out on all open, exercised as well as assigned positions.

The corporate actions can be broadly classified under stock benefits and cash benefits. The various stock benefits declared by the issuer of capital are:

i. Bonus
ii. Rights
iii. Merger/De-merger
iv. Amalgamation
v. Splits
vi. Consolidations
vii. Hive-off
viii. Warrants, and
ix. Secured Premium Notes (SPNs) among others.
ix. Extraordinary dividends

The methodology proposed by SEBI for adjustment of various corporate actions to be carried out is as follows:

a. **Bonus, Stock Splits and Consolidations**: The new strike price is arrived at by dividing the old strike price by the adjustment factor. Then, the new market lot/multiplier is arrived at by multiplying the old market lot by the adjustment factor. The new position is arrived at by multiplying the old position by the adjustment factor as under. The adjustment factor for Bonus, Stock Splits and Consolidations is arrived at as follows:

**Bonus**

Ratio – A: B Adjustment factor: \((A+B)/B\)

**Stock Splits and Consolidations**

Ratio – A: B Adjustment factor: \(A/B\)

The above methodology may result in fractions due to the corporate action e.g. a bonus ratio of 3:7. With a view to minimizing fraction settlements, the following methodology is adopted:

a. Compute value of the position before adjustment
b. Compute value of the position taking into account the exact adjustment factor

c. Carry out rounding off for the Strike Price and Market Lot
d. Compute value of the position based on the revised strike price and market lot
The difference between a and d above, if any, is to be decided in the manner laid down by the group stated above by adjusting Strike Price or Market Lot, so that no forced closure of open position is mandated.

b. **Right:** The new strike price is arrived at by multiplying the old strike price by the adjustment factor. The new market lot/multiplier is arrived at by dividing the old market lot by the adjustment factor. For the rights corporate action the adjustment factor is arrived as under:

Ratio – A: B and Issue price of rights is S.

Adjustment factor: \((P-E)/P\)

Where \(P = \text{Spot price on last cum date}\)

\[ E = (P-S) \times A / (A+B) \]

Dividends which are below 10% of the market value of the underlying stock are deemed to be ordinary dividends and no adjustment in the Strike Price is made for ordinary dividends. For extra-ordinary dividends, above 10% of the market value of the underlying stock, the Strike Price is adjusted accordingly.

In order to decide on whether the dividend is ‘extra-ordinary’ (i.e. over 10% of the market price of the underlying stock.), the market price considered is the closing price of the scrip on the day previous to the date on which the announcement of the dividend is made by the Company after the meeting of the Board of Directors. However, in cases where the announcement of dividend is made after the close of market hours, the same day's closing price is taken as the market price. Further, if the shareholders of the company in the AGM change the rate of dividend declared by the Board of Directors, then to decide whether the dividend is extra-ordinary or not is based on the rate of dividend communicated to the exchange after AGM and the closing price of the scrip on the day previous to the date of the AGM.”

In case of declaration of ‘extra-ordinary’ dividend by any company, the total dividend amount (special and / or ordinary) is reduced from all the strike prices of the option contracts on that stock. The revised strike prices are applicable from the ex-dividend date specified by the exchange.
The exchanges on a case to case basis can carry out adjustments for other corporate actions as decided by the group formed under SEBI’s requirement in conformity with the guidelines stipulated here. Stock Exchanges are also required to give notice of four weeks to the market for any change in the contract specifications and also in case of change in a constituent of an Index on which derivatives are available.

As per clause 16 of the Equity Listing Agreement entered by the Listed companies with the Stock Exchanges, the company on whose stocks, derivatives are available or whose stocks form part of an index on which derivatives are available, are required to give a notice period of 30 days to stock exchanges for corporate actions like mergers, de-mergers, splits and bonus shares.

SEBI also stipulated that the Exchanges are required to determine the manner of adjustment in derivative contracts at the time of corporate actions in conformity with the following principles:-

a. “The basis for any adjustment for corporate action should be such that the value of the position of the market participants on cum and ex-date for corporate action has to continue to remain the same as far as possible.

b. To take into account best practices followed internationally.

c. To consider the circumstances of a particular case and the general interest of investors in the market.

d. The adjustment methodology for a corporate action should be uniform across all exchanges.”

Thus, in cases of merger on announcement of the record date for the merger, the exchange communicates exact date of expiration (Last Cum-date) to market participants. After the announcement of the Record Date, no fresh contracts on Futures and Options are introduced on the underlying that would cease to exist subsequent to the merger. Un-expired contracts outstanding as on the last cum-date are compulsorily settled at the settlement price. The settlement price is the closing price of the underlying on the last cum-date. GTC/GTD orders for the futures & options contracts on the underlying, outstanding at the close of business on the last cum-date are cancelled by the Exchanges.

Hence, the value of positions of market participants, on cum and ex-dates of the corporate action, continues to remain the same as far as
possible. This facilitates in retaining the relative status of positions viz. in-the-money, at-the-money and out-of-money. This also addresses issues related to exercise and assignments.

Any adjustment for corporate actions is carried out by the exchanges on the last day after the close of trading hours on cum basis in the underlying equities market.

4.4 **Products offered in the Equity Derivatives Market by the Stock Exchanges:**

SEBI vide its various circulars and guidelines issued from time to time have laid down the eligibility criteria for inclusion/exclusion of a stock/index for trading in the derivatives segment on the Stock Exchanges. The Exchanges select the stocks and indices on which the futures and options are introduced based on SEBI guidelines and surveillance measure. Below given are various products in the equity derivatives market offered by the exchanges:

**4.4.1 Products in Equity Derivatives Segment on NSE**

Since launch of the Index Derivatives on benchmark S&P CNX Nifty Index in 2000, the National Stock Exchange of India Limited (NSE) today is offering varied product offering in equity derivatives. The Exchange currently in 2012 provides trading in Futures and Options contracts on 8 major indices and 151 stocks. The Exchange also introduced trading in Mini Derivatives contracts to provide easier access for small investors to invest in Nifty futures and options. Derivatives on the following Products are offered on NSE:

- S&P CNX Nifty Index
- Mini derivative contracts on S&P CNX Nifty Index
- CNXIT Index
- BANK Nifty Index
- Nifty Midcap 50 Index
- CNX Infrastructure Index
- CNX PSE Index
- DJIA
- S&P500
- Individual Securities

NSE presently offers four broad products under the equity derivatives segment. The details of these products are as under:
a) **Index Futures**

Under the index futures NSE offers seven products viz. S&P CNX Nifty Futures, CNX IT Futures, MININIFTY Futures, Bank NIFTY Futures, Nifty Midcap 50 Futures, CNXPSE Futures and CNX Infrastructure Futures. The Exchange commenced trading in Nifty index futures on June 12, 2000 and the other indices were included subsequently. The Exchange defines the characteristics of futures contract such as the underlying index, market lot, and maturity date of the contract. The futures contracts are available for trading from the day of introduction to the expiry date. The details of Index futures offered by NSE are as under:

i. **S&P CNX Nifty Futures**

The Nifty index futures contracts are based on the popular market benchmark S&P CNX Nifty index. S&P CNX Nifty futures contracts have a maximum of 3-month trading cycle - the near month (one), the next or middle month (two) and the far month (three). Exchange introduces new contract on the trading day following the expiry of the near month contract. The new contracts are introduced normally for three month duration. This way, at any point in time, there are 3 contracts available for trading in the market i.e., one near month, one mid month and one far month duration respectively. S&P CNX Nifty futures contracts expire on the last Thursday of the expiry month. If the last Thursday is a trading holiday, the contracts expire on the previous trading day.

The value of futures contracts on Nifty is not less than Rs. 2 lakhs at the time of introduction. The permitted lot size for futures contracts & options contracts is same for a given underlying. The price step in respect of S&P CNX Nifty futures contracts is Re.0.05. The Base price of S&P CNX Nifty futures contracts on the first day of trading is theoretical futures price. The base price of contracts on subsequent trading days is the daily settlement price of futures contracts. There are no during day minimum/maximum price ranges applicable for S&P CNX Nifty
futures contracts. However, in order to prevent erroneous order entry by trading members, the exchange has kept the operating range at +/- 10%. Orders which come to the exchange as quantity freeze are the ones that have a quantity of more than 15000. In respect of orders which have come under quantity freeze, brokers are required to confirm to the Exchange that there is no inadvertent error in the order entry and that the order is genuine.

ii. Mini Nifty Derivatives Futures

A mini Nifty derivative future contract is similar to any other existing futures contract except for the minimum contract size. SEBI had prescribed a minimum contract value of not less than Rs 1 lac for mini derivative contracts as compared to Rs 2 lacs for normal derivative contracts. Some of the salient features of the mini nifty derivatives contracts are that it has mini lot size of 20, minimises trading costs and margin pay out for investors, easier access for small investors to invest in Nifty futures and options, Nifty 50 as underlying index, widely tracked and traded by investors and provides arbitrage opportunities between Nifty and mini Nifty derivative contracts

Mini NIFTY futures contracts are based on the S&P CNX Nifty index. The contract specifications for Mini Nifty Future contracts on S&P CNX Nifty index are exactly as applicable to the underlying S&P CNX Nifty index. The trading specifications for Mini Nifty Future contracts on S&P CNX Nifty index are similar to the one applicable to the future contracts on S&P CNX Nifty index. The value of future contracts on Mini NIFTY is not less than Rs. 1 lakhs at the time of introduction. The permitted lot size for Mini Nifty future contracts & options contracts is same for a given underlying or such lot size.

iii. Other Index Futures - CNXIT Futures, Bank NIFTY Futures, Nifty Midcap 50 Futures, CNXPSE Futures and CNX Infrastructure Futures

A futures contract is a forward contract, which is traded on an Exchange. Other index futures contracts offered by NSE can be described as follows:
1. CNX IT Futures Contracts are based on the index CNX IT index.
2. BANK Nifty futures Contracts are based on the index BANK NIFTY index.
3. NFTYMCP50 futures contracts are based on the Nifty Midcap 50 index.
4. CNXPSE futures contracts are based on the CNX PSE index.
5. CNXINFRA futures contracts are based on the CNX Infrastructure index.

All these contracts have a maximum of 3-month trading cycle similar to those mentioned earlier for Nifty Futures contracts. The new contract is normally introduced for three month duration like S&P CNX Nifty index futures contracts. These Futures contracts expire on the last Thursday of the expiry month. If the last Thursday is a trading holiday, the contracts expire on the previous trading day.

The value of futures contracts, permitted lot size, price step, base price, price ranges, operating ranges, quantity freeze limit and other such specifications are similar to the one applicable for the S&P CNX Nifty index futures contracts mentioned earlier in this chapter.

b) Index Options

NSE offers seven products under index options, viz. S&P CNX Nifty Options, CNX IT Options, MININIFTY Options, Bank NIFTY Options, Nifty Midcap 50 Options, CNXPSE Options and CNX Infrastructure Options. NSE introduced trading in index options on June 4, 2001. The options contracts are European style and cash settled. Earlier, the options were allowed for a period of one year only. Since March 2008, the exchange started allowing long dated option contracts after SEBI allowed such options to be traded in the equity derivatives market vide its circular dated January 11, 2008. The details of Index options offered by NSE are as under:

i. S&P CNX Nifty Options

The underlying index for S&P CNX Nifty options is S&P CNX Nifty. S&P CNX Nifty options contracts have 3 consecutive monthly contracts, additionally 3 quarterly months of the cycle March / June / September / December and 5 following semi-annual months of the cycle June / December are available, so that
at any point of time there would be options contracts with at least 3 year tenure available. On expiry of the near month contract, new contracts (monthly/quarterly/ half yearly contracts as applicable) are introduced at new strike prices for both call and put options, on trading day following the expiry of the near month contract.

S&P CNX Nifty options contracts expire on last Thursday of the expiry month. If the last Thursday is a trading holiday, the contracts expire on previous trading day. The Exchange provides various strike prices for every option type (i.e. call & put) during the trading month. The strike scheme for all near expiry in the index options is given below:

Table 4.3
Strike Scheme for all near expiry (near, mid and far months)
Index Options Contracts

<table>
<thead>
<tr>
<th>Index Level</th>
<th>Strike Interval</th>
<th>Number of strikes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>In the money- At the money- out of the money</td>
</tr>
<tr>
<td>≤ 2000</td>
<td>50</td>
<td>8-1-8</td>
</tr>
<tr>
<td>&gt;2001 ≤ 3000</td>
<td>100</td>
<td>6-1-6</td>
</tr>
<tr>
<td>&gt;3000 ≤ 4000</td>
<td>100</td>
<td>8-1-8</td>
</tr>
<tr>
<td>&gt;4000 ≤ 6000</td>
<td>100</td>
<td>12-1-12</td>
</tr>
<tr>
<td>&gt;6000</td>
<td>100</td>
<td>16-1-16</td>
</tr>
</tbody>
</table>

Source: Compiled from NSE

As can be seen from above table, there are less number of strikes offered when the index level is low as compared to number of strikes offered when the index level is high. The strike scheme for all long term quarterly and half yearly expiry option contracts is given below:

Table 4.4
Strike Scheme for Nifty long term Quarterly & Half Yearly Expiry Option Contracts

<table>
<thead>
<tr>
<th>Index Level</th>
<th>Strike Interval</th>
<th>Number of strikes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>In the money- At the money- out of the money</td>
</tr>
<tr>
<td>≤ 2000</td>
<td>100</td>
<td>6-1-6</td>
</tr>
<tr>
<td>&gt;2001 ≤ 3000</td>
<td>100</td>
<td>9-1-9</td>
</tr>
<tr>
<td>&gt;3000 ≤ 4000</td>
<td>100</td>
<td>12-1-12</td>
</tr>
<tr>
<td>&gt;4000 ≤ 6000</td>
<td>100</td>
<td>18-1-18</td>
</tr>
<tr>
<td>&gt;6000</td>
<td>100</td>
<td>24-1-24</td>
</tr>
</tbody>
</table>

Source: Compiled from NSE
As can be seen from above table, there are more number of strikes made available to the market participants at higher index level. These are also more than the strikes offered for near month option expiry contracts.

The value of option contracts on Nifty is not less than Rs. 2 lakhs at the time of introduction. The permitted lot size for futures contracts & options contracts is same for a given underlying or such lot size. The price step in respect of S&P CNX Nifty options contracts is Re.0.05. Base price of options contracts, on introduction of new contracts, is the theoretical value of options contract arrived based on Black-Scholes model of calculation of options premiums. The base price of contracts on subsequent trading day is the daily close price of options contracts. If the contract is not traded for the day, the base price of contract for next trading day is the theoretical price of options contract arrived based on Black-Scholes model of calculation of options premiums. If orders placed by brokers are of the quantity of more than 15000, these orders come to the exchange as quantity freeze orders. In respect of such orders, brokers are required to confirm to the Exchange that there is no inadvertent error in the order entry and the order is genuine before these are allowed to enter the market by the Exchange.

ii. Mini Nifty Derivatives Options

A Mini Nifty derivative option contract is similar to any other existing option contract except for minimum contract size. SEBI had prescribed a minimum contract value of not less than Rs 1 lac for Mini Nifty derivative contracts as compared to Rs 2 lacs for normal derivative contracts. Mini Nifty option contracts are based on the S&P CNX Nifty index.

NSE defines specifications of mini derivative option contracts such as underlying index, market lot, and the maturity date of the contract. The option contracts are available for trading on NSE from the day of introduction of contract to the expiry date. The mini option contracts are European style and cash settled. The contract and trading specifications for Mini Option contracts on
S&P CNX Nifty index are exactly similar to the underlying S&P CNX Nifty index. The value of option contracts on Mini Nifty is not less than Rs. 1 lakhs at the time of introduction. The permitted lot size for future & option contracts is same for a given underlying or such lot size.

iii. Other Index Options - CNXIT Options, Bank NIFTY Options, Nifty Midcap 50 options, CNXPSE Options and CNX Infrastructure Options

An option gives a person the right but not the obligation to buy or sell something. In case of these index options, the underlying is respective indices. These index options contracts can be described as follows:

1. CNX IT Options Contracts are based on index CNX IT index.
2. BANK Nifty Options Contracts are based on index BANK NIFTY index.
3. NFTYMCAP50 Options Contracts are based on Nifty Midcap 50 index.
4. CNXPSE Options Contracts are based on CNX PSE index.
5. CNXINFRA Options Contracts are based on CNX Infrastructure index.

These index options contracts have a maximum of 3-month trading cycle - the near month (one), the next month (two) and the far month (three). On expiry of the near month contract, new contracts are introduced at new strike prices for both call and put options, on trading day following expiry of the near month contract. The new contracts are introduced for three month duration. These index options contracts expire on last Thursday of the expiry month. If last Thursday is a trading holiday, the contracts expire on previous trading day. The number of contracts provided in options on index is based on the range in previous day's closing value of the underlying index and applicable as per the table 4.3 provided earlier for the Strike Scheme for all near expiry options contracts.

The value of the option contracts, permitted lot size, price step, base price, quantity freeze limit and other such specifications of these options contracts are similar to the ones applicable for the S&P CNX Nifty options contracts.
c) **Stock Futures**

NSE commenced trading in futures on individual securities on November 9, 2001. In 2012, there are 151 securities on which futures contracts are available on NSE. The Exchange defines the specifications of the futures contract such as the underlying security, market lot, and maturity date of the contract. The futures contracts are available for trading from the day of introduction of contracts to the expiry date.

Futures contracts have a maximum of 3-month trading cycle - the near month (one), the next month (two) and the far month (three). New contracts are introduced on trading day following expiry of the near month contracts. The new contracts are introduced for three month duration. This way, at any point in time, there are 3 contracts available for trading in the market (for each security) i.e., one near month, one mid month and one far month duration respectively. Futures contracts expire on last Thursday of the expiry month. If last Thursday is a trading holiday, the contracts expire on previous trading day.

The value of futures contracts on individual securities is not less than Rs. 2 lakhs at the time of introduction for the first time on any exchange. The permitted lot size for futures contracts & options contracts is same for a given underlying or such lot size as stipulated by the Exchange from time to time. The price step in respect of futures contracts is Re.0.05. The base price of futures contracts on first day of trading (i.e. on introduction) is the theoretical futures price. The base price of contracts on subsequent trading day is the daily settlement price of futures contracts. Minimum/maximum day price ranges are not applicable for futures contracts. However, in order to prevent erroneous order entry by trading members, operating ranges are kept at +/- 20 %.

Orders which come to the exchange as a quantity freeze are based on the notional value of the contract of around Rs.5 crores. Quantity freeze is calculated for each underlying on the last trading day of each calendar month by the Exchange and is applicable through the next calendar month. In respect of orders which have come under quantity freeze, brokers are required to confirm to the Exchange that
there is no inadvertent error in order entry and the order is genuine for the Exchange to approve such orders.

d) Stock Options

NSE became the first exchange to launch trading in options on individual securities. Trading in options on individual securities commenced from July 2, 2001. Option contracts traded on NSE are European style and cash settled and are available on 151 securities stipulated by the Securities & Exchange Board of India (SEBI). These securities are traded in the Capital Market segment of the Exchange.

Options contracts have a maximum of 3-month trading cycle - the near month (one), the next month (two) and the far month (three). On expiry of the near month contract, new contracts are introduced at new strike prices for both call and put options, on trading day following expiry of the near month contract. The new contracts are introduced for three month duration. Options contracts expire on last Thursday of the expiry month. If last Thursday is a trading holiday, the contracts expire on previous trading day. The Exchange also applies following strike parameter for options contracts on all individual securities where strike price intervals are:

<table>
<thead>
<tr>
<th>Underlying Closing Price</th>
<th>Strike Price Interval</th>
<th>No. of Strikes Provided In the money-</th>
<th>No. of additional strikes which may be enabled intraday in either direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤Rs.50</td>
<td>2.5</td>
<td>5-1-5</td>
<td>5</td>
</tr>
<tr>
<td>&gt; Rs.50 to ≤ Rs.100</td>
<td>5</td>
<td>5-1-5</td>
<td>5</td>
</tr>
<tr>
<td>&gt; Rs.100 to ≤ Rs.250</td>
<td>10</td>
<td>5-1-5</td>
<td>5</td>
</tr>
<tr>
<td>&gt; Rs.250 to ≤ Rs.500</td>
<td>20</td>
<td>5-1-5</td>
<td>5</td>
</tr>
<tr>
<td>&gt; Rs.500 to ≤ Rs.1000</td>
<td>20</td>
<td>10-1-10</td>
<td>10</td>
</tr>
<tr>
<td>&gt; Rs.1000</td>
<td>50</td>
<td>10-1-10</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Compiled from NSE

The Exchange, at its discretion, enables additional strikes as mentioned in the above table in the direction of the price movement, intraday, if required. The additional strikes are enabled by the Exchange during the day at regular intervals and message for the same
is broadcasted to all trading terminals of brokers. New contracts with new strike prices for existing expiration date are introduced for trading on the next working day based on previous day’s underlying closing values, as and when required. In order to decide upon the at-the-money strike price, the underlying closing value is rounded off to the nearest strike price interval. In-the-money strike prices and out-of-the-money strike prices are based on the at-the-money strike price interval.

The parameters such as value of option contracts, permitted lot size and price step is similar to one applicable for Stock Futures contracts. Base price of options contracts, on introduction of new contracts is the theoretical value of the options contract based on Black-Scholes model of calculation of options premiums. The base price of the contracts on subsequent trading day is daily close price of options contracts. If contract is not traded for the day, base price of the contract for next trading day is the theoretical price of options contract based on Black-Scholes model of calculation of options premiums. Orders which come to exchanges as a quantity freeze are based on the notional value of contract of around Rs. 5 crores. Quantity freeze is calculated for each underlying on last trading day of each calendar month and is applicable throughout the next calendar month. In respect of orders which have come under quantity freeze, members are required to confirm to the Exchange that there is no inadvertent error in order entry and the order is genuine for Exchange to approve such orders.

4.4.2 Products in Equity Derivatives Segment on BSE

BSE provides trading opportunities in various products such as Index Futures, Stock Futures, Index Options (Weekly, Monthly & Long Dated Options), Stock Options (Weekly & Monthly Options) and Futures of Foreign Indices. BSE currently provides futures and options contracts on 5 Indices and 151 Stocks. BSE also provides Futures contracts on 4 Foreign Indices. Derivatives on the following products are offered on BSE:

- BSE 30 SENSEX Index
- SENSEX MINI
- BSE BANKEX
- BSE OIL & GAS INDEX
BSE presently offers six broad products under the equity derivatives segment namely:

i. Index Futures

ii. Stock Futures

iii. Index Options (Weekly, Monthly & Long Dated Options)

iv. Stock Options (Weekly & Monthly Options)

v. Calendar Spread

vi. Cash Futures Spread

The details of these products are as under:

a) **Index Futures**

The Exchange introduced equity derivatives trading in BSE 30 SENSEX on June 9, 2000 and the other indices were included subsequently. Under index futures, BSE offers six index products (based on five Indian indices) and four foreign indices as mentioned below in the table:

### Table 4.6

*Index Products offered by BSE with Indices as Underlying*

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Underlying Indices/Product</th>
<th>Market Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BSE 30 SENSEX</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>SENSEX MINI (underlying BSE 30 SENSEX)</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>BSE BANKEX</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>BSE OIL &amp; GAS INDEX</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>BSE TECK INDEX</td>
<td>55</td>
</tr>
<tr>
<td>6</td>
<td>BSE100</td>
<td>50</td>
</tr>
</tbody>
</table>

**Foreign Indices (Only Futures Contracts)**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Underlying indices</th>
<th>Market Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HANG SENG Index Futures</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>MICEX Index Futures</td>
<td>150</td>
</tr>
<tr>
<td>3</td>
<td>FTSE / JSE Top40 Futures</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>IBOVESPA Futures</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Compiled from BSE
The Exchange defines specifications of the futures contract such as underlying index, market lot, and the maturity date of the contract. The futures contracts are available for trading from the day of introduction of contract to the expiry date. The specifications of these index futures contracts are similar to the Index futures offered by NSE except for the change in the underlying. These contracts also have similar contract expiry periods. The only difference is in tick price or price step in respect of index futures since tick price in spread price terms for SENSEX futures contracts is Rs. 0.25, tick price in spread price terms for BSE-100 futures contracts is Rs. 0.05, and tick price in spread price terms for other index futures contracts is Rs. 1.

b) Index Options

Under the index options BSE offers five Indian indices through six indices products as mentioned in the above table viz. BSE 30 SENSEX Options, SENSEX MINI Options, BSE BANKEX Options, BSE OIL & GAS INDEX Options, BSE TECK INDEX Options and BSE100 Options. BSE introduced trading in index options on June 01, 2001. The options contracts are European style and cash settled. The product details of Index options offered by BSE are similar to the ones offered by NSE.

These index options contracts have 3 consecutive monthly contracts and also weekly contracts. Additionally only BSE 30 SENSEX Options has 3 quarterly months of the cycle March / June / September / December and 5 following semi-annual months of the cycle June / December are available, so that at any point in time there are options contracts with at least 3 year tenure available. On expiry of the near month contract, new contracts (monthly/quarterly/ half yearly contracts as applicable) are introduced at new strike prices for both call and put options, on trading day following expiry of the near month contract. These contracts expire on last Thursday of the expiry month. If the last Thursday is a trading holiday, contracts expire on the previous trading day. The Exchange provides various strike prices for every option type (i.e. call & put) during the trading month. These
options have the tick size of Rs. 0.05 for SENSEX options and BSE-100 options contracts Rs. 0.25 for other index options contracts.

c) **Stock Futures**

BSE commenced trading in futures on individual securities from November 1, 2001. The futures contracts are available on 53 BSE selected stocks and 98 NSE selected stocks making in all 151 securities complying with the stipulated criteria of SEBI. BSE defines specifications of the futures contract such as the underlying security, market lot and maturity date of the contract. The futures contracts are available for trading from the day of introduction of contract to the expiry date.

These Stock Futures contracts have a maximum of 3-month trading cycle - the near month (one), the next month (two) and the far month (three). New contracts are introduced on trading day following expiry of the near month contracts. The new contracts are introduced for three month duration. This way, at any point in time, there are 3 contracts available for trading in the market (for each security) i.e., one near month, one mid month and one far month duration respectively. Futures contracts expire on last Thursday of the expiry month. If the last Thursday is a trading holiday, contracts expire on the previous trading day. Tick size for these stock futures contracts is Rs.0.05.

d) **Stock Options**

On BSE trading in options on individual securities commenced from July 9, 2001. Stock Option contracts are European style and are available on 151 securities on which futures contracts are available.

Options contracts have a maximum of 3-month trading cycle - the near month (one), the next month (two) and the far month (three) and also weekly. On expiry of the near month contract, new contracts are introduced at new strike prices for both call and put options, on the trading day following the expiry of the near month contract. The new contracts are introduced for three month duration. Options contracts expire on the last Thursday of the expiry month. If last Thursday is a trading holiday, the contracts expire on previous trading day. Tick size for these stock futures contracts is Rs.0.05.
e) Calendar Spread

A calendar spread is a facility provided in BSE’s Derivatives segment and is treated as one of the product offered to the market by BSE. This facility is offered on all those underlying assets (stocks and indices) on which derivative instruments are available for trading in BSE Derivatives segment. This facility helps in creating simultaneously two positions viz. one in near month futures instrument and second in the far month futures instrument of same underlying. To facilitate this, calendar spread facility is required to be available for trading across 3 contract months at any time, corresponding to the current, near and far monthly futures instruments on that underlying asset. Orders in calendar spread are not allowed on maturity/ expiry of the futures instrument. A trade is executed when any order in a calendar spread matches with another opposite order entered in the same calendar spread. Execution of two orders follows existing price-time priority logic. On execution of a original calendar spread trade, it is split into two more trades – one trade executed in the near month and the other trade executed in the far month futures contract of same underlying.

Market lots of calendar spread are similar to the monthly futures instrument. Tick size for Stock Futures spread is Rs.0.05 and for Index Futures spread is Rs. 0.25.

f) Cash-Future Spread

A Cash-Futures Spread (CFS) is a new facility introduced in BSE’s Derivatives segment and is treated as a product offered to the market by BSE. The CFS facility is offered on all those underlying stocks on which derivative instruments are available for trading in BSE Derivatives segment. The CFS facility consists of 2 legs viz. one equity segment leg and second leg of the futures instrument leg. CFS facility is available for trading across 3 contract months at any time, corresponding to the current, near and far month futures instruments on that underlying asset.

Orders are allowed only if instruments of both Equity and Derivatives segments are available for trading. Moreover, orders are
not allowed on maturity/ expiry of the futures instrument. Orders are also not allowed in case either Equity or Derivatives segments is closed for trading. A trade gets executed when any order in a CFS matches with another opposite order entered in the same CFS. Execution of 2 orders follows the existing price-time priority logic. On execution of a trade, this trade is split into two more trades – one trade executed on the equity segment instrument and other trade executed on futures instrument, both belonging to the same underlying stock asset. Market lots of the CFS are similar to the futures instrument of that underlying asset. Tick size is Rs.0.05 for Cash Future Spread.

4.5 Market Structure/Framework:

SEBI was established on April 12, 1992 in accordance with the provisions of the Securities and Exchange Board of India Act, 1992. SEBI was established with the responsibility of protecting the interests of investors in securities, promoting the development of, and regulating the securities market and for matters connected therewith or incidental thereto. The stock exchanges along with other various intermediaries provide crucial platform for trading, clearing and settlement in the derivatives market. The stocks in derivatives segment on the exchanges are traded, cleared and settled within regulatory framework prescribed by the exchanges and the SEBI vide various circulars, guidelines, rules, regulations and other such communications issued from time to time.

The trading platforms of the exchanges are now accessible from anywhere in the country through broker’s trading terminals, through V-SAT, leased line and internet connectivity. In a geographically widespread country like India, this has helped in significantly expanding the reach of trading platform to nook and corners of the country.

All transactions in the derivatives segment are required to go through three stage process—trading, clearing and settlement. The stock exchanges provide platform for trading i.e. order matching mechanism, the clearing corporation/clearing house determine funds and/or securities obligations of the trading/clearing members (brokers), and ascertain that trades are settled through the exchange for all obligations. The clearing banks and depositories facilitate
necessary interface between custodians/clearing members and clearing corporation/house for settlement of funds and/or securities obligations of brokers.

There are many entities and intermediaries, such as authorized persons, trading members, clearing members, custodial participants, clearing corporation, clearing house, custodians, clearing banks and depositories which are involved in the process of clearing and settlement. The functions of each of these entities are explained below to give an idea about functioning of these entities and their roles/responsibilities in trading, clearing and settling mechanism in the equity derivatives market.

4.5.1 Stock Exchanges offering Equity Derivatives Trading:

As mentioned earlier, there are only two Stock Exchanges, namely BSE and NSE, offering equity derivatives trading platform. They have been offering various products in equity derivatives segment since June 2000. In July 2012, MCX-SX received permission from SEBI to offer equity derivatives platform in India. MCX-SX had started trading activity in the equity derivatives segment on its platform from February 11, 2013.

4.5.2 Intermediaries Providing Trading and Clearing Platform:

The trading platform offered by stock exchanges for derivatives trading is made accessible to clients by Trading Members (TMs), Trading and Clearing Members (TCMs), Trading and Self Clearing Members (STCMs) and Limited Trading Members (LTMs) (collectively or singularly referred as ‘brokers’). These entities can make this platform available to clients through its own office, branch offices, and/or Authorized Person (APs). These intermediaries play a very significant role in derivatives market by bringing together buyers and sellers from nook and corners of India and also now globe via internet trading and Direct Market Access (DMA) facility offered to their Institutional clients. The brokers give buy/sell orders either on their own account or on behalf of clients which are matched on the trading platform so the trades get executed. The role and functioning of various categories of intermediaries referred above is explained further in brief.
a) Memberships for Trading and Clearing of Equity Derivatives Trades:

Largely there are four different types of memberships which are granted to brokers on stock exchanges to trade and settle on equity derivatives segment of the exchanges. These are:-

1. "Trading Member (TM): Broker who has opted only for trading membership and is getting clearing activities done through some other Clearing member are classified as trading member.

2. "Trading & Clearing Member (TCM): A Clearing Member who is also a TM. Such CMs clear and settle their own proprietary trades, their clients’ trades as well as trades of other TM’s & Custodial Participants.

3. "Trading & Self Clearing Member (STCM): Trading and self clearing member can take up only his trades for clearing operation. Such CMs clear and settle only their own proprietary trades and their clients' trades but cannot clear and settle trades of other TM's.

4. "Professional Clearing Member (PCM): A clearing member who is not a trading member is classified as professional clearing member. Typically banks or custodians become a PCM. PCM can clear and settle trades for other trading members as well as of Custodial Participants. This is a special category of member who clears and settles trades executed for their clients (individuals, institutions, etc.). In such cases, the functions and responsibilities of PCM are similar to those of the custodians. PCMs also undertake clearing and settlement responsibilities of other trading members. The PCMs in this case have no trading rights, but have clearing rights, i.e., they clear the trades of their associate trading members and institutional clients who register as Custodial Participants."[13]

5. "Limited Trading Member (LTM): This is a kind of membership which is offered only on BSE. Any member of NSE or a member of subsidiary company of Regional Stock Exchange (RSE), who is a clearing member of derivative segment, can become a Limited Trading Member of derivatives segment of BSE. To become LTM, a person need not be a member of BSE in order to be eligible for registration as a LTM. A Limited Trading Member has the rights, privileges, obligations & liabilities of a TM."[14]
The stock exchanges can admit a broker as its member only on the basis of the terms specified in the Securities Contracts (Regulation) Act, 1956, the SEBI Act 1992, and the various rules, circulars, notifications, and guidelines, as well as the bye-laws, rules, and regulations issues by SEBI and the concerned stock exchanges from time to time. “No stock broker or any such intermediary recognized by SEBI is allowed to buy, sell, or deal in securities, unless it holds a certificate of registration from SEBI.”15 The stock exchanges, however, are allowed to stipulate further stricter requirements than those stipulated by SEBI for membership.

The minimum eligibility standards set by the Exchanges are more stringent than those laid down by SEBI. The admission of any trading member is based on various criteria like capital adequacy, track record, education and experience. Largely, the brokers of Capital Market Segment of the Exchange are eligible for admission as trading members / clearing members / self-clearing members on the derivatives segment.

The existing members of Capital Market Segment to become trading member / clearing member / self clearing member on derivatives segment of the Exchange are required to apply for derivatives segment membership separately. Brokers are required to submit an application form for trading/clearing/self clearing membership of derivatives segment in the exchange prescribed format. Thereafter, the application is scrutinized for its completeness and eligibility and clearances are obtained internally by the exchange as well as from other stock exchanges. Thereafter, on receipt of requisite clearances and necessary final approval from the competent authority of the exchange, an offer of membership with the terms and conditions of membership is given to the trading / clearing / self clearing member. Subsequently, the application is forwarded to SEBI with necessary fees and requisite documents. On receipt of the registration certificate from SEBI, the brokers are enabled on the Equity Derivatives Segment of the exchange subject to their completing other formalities.
Normally, the exchanges offer Composite membership of Cash Market & Equity Derivatives segments to new applicants. Further, for a new member to be admitted as a clearing / self clearing / professional clearing member in the Equity Derivatives segment of the exchange, the applicant is required to specify accordingly in the application form. These applicants are also required to appear for membership eligibility test & personal interview before the Exchange Committee. After interview and recommendation by the Committee, the Board of Exchange considers the applicant and provisionally admits new applicant as trading member and the process is followed for registration with SEBI.

The exchanges also allow transfer or conversion of membership. In such instances, exchanges require proposal for reconstitution of trading membership of the Exchange accompanied by statement of proposed shareholding of the company, proposed directors and details of new promoters etc. The same are verified for ensuring compliance with eligibility criteria prescribed by the Exchange and relevant statutory/ regulatory enactments for its membership. The proposed new promoters are required to appear for a test and an interview before the Committee. Based on the recommendation of the Committee, the Exchanges grant approval for reconstitution of trading membership. The Exchanges then forwards the request to SEBI for obtaining final approvals.

As recommended by Dr. L.C. Gupta Committee and as adopted by SEBI, there is set minimum net-worth requirement for Clearing Members (CMs). SEBI has also stipulated criteria for calculation of net-worth of the Clearing Member / Self Clearing Member / Professional Clearing Member. “SEBI has set minimum net-worth requirement for clearing members of the derivatives clearing corporation/house at Rs. 300 lakhs. The net-worth calculation methodology is specifically stated as under and is not calculated as per the normal accounting standards adopted by any corporate body:-

\[
\text{Net-worth} = \text{Capital} + \text{Free Reserves} - \text{Non-Allowable Assets}
\]

The List of Non-Allowable Assets consists following:
1) Fixed Assets 
2) Pledged securities 
3) Value of Members’ card 
4) Unlisted securities 
5) Bad Deliveries 
6) Doubtful Debts and advances 
7) Prepaid expenses and losses 
8) Intangible assets 
9) 30% of the marketable securities\[16\]

As per Exchanges, the net worth requirement of a Limited Trading Member is Rs. 10 lakhs, for Trading Members it is Rs. 25 lakhs on BSE and Rs. 100 lakhs on NSE, for Self-Clearing Members it is Rs. 100 lakhs and that of a Clearing / Professional Clearing members is Rs.300 lakhs. Further, there are also various security deposit requirements stipulated by the exchanges from time to time which is payable in respect of the trading membership of derivatives segment which is in addition to the security deposit relating to cash segment. The capital structure as available in 2012 for derivatives membership on the Exchanges is as under:

Table 4.7

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Limited Trading Members</th>
<th>Trading Members</th>
<th>Self-Clearing Membership</th>
<th>Clearing / Professional Clearing membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security Deposit</td>
<td>NIL (BSE)</td>
<td>NIL (BSE) and Rs. 25 lakhs (NSE)</td>
<td>Rs. 50 lakhs (BSE) and Rs. 75 lakhs (NSE)</td>
<td>Rs. 50 lakhs (BSE) and Rs. 75 lakhs for CM and Rs. 50 lakhs for PCM (NSE)</td>
</tr>
<tr>
<td>Net Worth</td>
<td>Rs. 10 lakhs (BSE)</td>
<td>Rs. 25 lakhs (BSE) &amp; Rs. 100 lakhs (NSE)</td>
<td>Rs. 100 lakhs (BSE &amp; NSE)</td>
<td>Rs.300 lakhs (BSE &amp; NSE)</td>
</tr>
</tbody>
</table>

Source: Compiled from BSE, NSE and SEBI

All the registered members in derivatives segment of exchanges are required to submit net worth certificate on a half yearly basis to the exchanges indicating compliance with the net worth norms specified by SEBI where as for all trading members, the requirement is on annual basis along with their annual accounts every year.
Clearing Members/ Self Clearing Members / Professional Clearing Members are responsible for settling their obligations as determined by the Clearing Corporation. The Clearing Members and Professional Clearing Members also clear trades of Institutional Clients, High Net-worth Clients who register as Custodial Participants with them and other trading members affiliated to them for clearing trades in the derivatives segment. They do so by making available funds and/or securities in the designated accounts with the clearing bank/depositories.

The data regarding registered members in the equity derivatives segment along with their categories are published by SEBI in their annual reports. The details of exchange wise brokers registered with SEBI in equity derivatives segment along with the identification as corporate brokers are given below:

**Table 4.8**

**Exchange-wise Corporate Brokers Registered in Equity Derivatives Segment**

<table>
<thead>
<tr>
<th>Year</th>
<th>BSE</th>
<th>NSE</th>
<th>BSE+NSE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Brokers</td>
<td>Corporate Brokers</td>
<td>Corporate Brokers as % of Total Brokers</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2000-01</td>
<td>135</td>
<td>128</td>
<td>94.8</td>
</tr>
<tr>
<td>2001-02</td>
<td>160</td>
<td>149</td>
<td>93.1</td>
</tr>
<tr>
<td>2002-03</td>
<td>171</td>
<td>159</td>
<td>93.0</td>
</tr>
<tr>
<td>2003-04</td>
<td>180</td>
<td>166</td>
<td>92.2</td>
</tr>
<tr>
<td>2004-05</td>
<td>260</td>
<td>234</td>
<td>90.0</td>
</tr>
<tr>
<td>2005-06</td>
<td>281</td>
<td>252</td>
<td>89.7</td>
</tr>
<tr>
<td>2006-07</td>
<td>332</td>
<td>300</td>
<td>90.4</td>
</tr>
<tr>
<td>2007-08</td>
<td>431</td>
<td>392</td>
<td>91.0</td>
</tr>
<tr>
<td>2008-09</td>
<td>458</td>
<td>419</td>
<td>91.5</td>
</tr>
<tr>
<td>2009-10</td>
<td>474</td>
<td>435</td>
<td>91.8</td>
</tr>
<tr>
<td>2010-11</td>
<td>791</td>
<td>721</td>
<td>91.2</td>
</tr>
<tr>
<td>Apr 11-Dec11</td>
<td>903</td>
<td>814</td>
<td>90.1</td>
</tr>
</tbody>
</table>

*Source: Compiled from SEBI*

As can be seen from the above table, the number of members in the equity derivatives market segment on both the exchanges has been continuously increasing year after year. Further, the data clearly
shows that there has been large number of brokers who are corporate and it has always been drive of the exchanges to admit the quality brokers so that the sanity of the market is maintained. Even when the number of brokers are increasing the percentage of corporate brokers have been almost near consistent.

NSE had registered 1329 brokers with them whereas BSE had registered 903 brokers with them as on December 31, 2011 for trading in equity derivatives segment. Their break up in various categories of memberships has been presented below in the table:

| Table 4.9 |
| Number of Registered Members in Equity Derivatives Segment during 2011-12 |

<table>
<thead>
<tr>
<th>Type of Member</th>
<th>NSE</th>
<th>BSE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Trading Member</td>
<td>41</td>
<td>1340</td>
</tr>
<tr>
<td>Clearing Member</td>
<td>8</td>
<td>267</td>
</tr>
<tr>
<td>Self Clearing Member</td>
<td>50</td>
<td>446</td>
</tr>
</tbody>
</table>

Source: Compiled from SEBI

NSE had a total of 1340 Trading Members, and BSE had a total of 930 Trading Members. These trading members also get registered under the other categories depending on their clearing and settlement preferences as Self Clearing Members and Clearing Members.

The authorities have been encouraging the corporatization of the broking industry. As a result, a number of broker-proprietor firms and partnership firms have converted themselves into corporate bodies. The comparative position of the number of trading members in F&O segment of the exchanges from the year 2000-01 till 2011-12 is as under:

| Table 4.10 |
| Stock Brokers on the Basis of Ownership in Equity Derivatives Segment |

<table>
<thead>
<tr>
<th>Year</th>
<th>Proprietorship</th>
<th>% of Total Broker</th>
<th>% of Total Broker</th>
<th>Corp orate</th>
<th>% of Total Brokers</th>
<th>Proprietorship</th>
<th>% of Total Broker</th>
<th>Partner ship</th>
<th>% of Total Brokers</th>
<th>Corp orate</th>
<th>% of Total Brokers</th>
<th>BSE</th>
<th>NSE</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01</td>
<td>6</td>
<td>4.4</td>
<td>0.0</td>
<td>0.0</td>
<td>62</td>
<td>4.4</td>
<td>0.0</td>
<td>0.0</td>
<td>128</td>
<td>94.8</td>
<td>8.8</td>
<td>0.0</td>
<td>135</td>
<td>305</td>
</tr>
<tr>
<td>2001-02</td>
<td>10</td>
<td>6.3</td>
<td>0.0</td>
<td>0.0</td>
<td>149</td>
<td>93.1</td>
<td>8.8</td>
<td>0.0</td>
<td>17</td>
<td>3.8</td>
<td>25</td>
<td>90.3</td>
<td>160</td>
<td>442</td>
</tr>
<tr>
<td>2002-03</td>
<td>11</td>
<td>6.4</td>
<td>0.0</td>
<td>0.0</td>
<td>159</td>
<td>93.0</td>
<td>23</td>
<td>4.1</td>
<td>28</td>
<td>5.0</td>
<td>503</td>
<td>90.5</td>
<td>171</td>
<td>556</td>
</tr>
<tr>
<td>2003-04</td>
<td>13</td>
<td>7.2</td>
<td>0.0</td>
<td>0.0</td>
<td>166</td>
<td>92.2</td>
<td>29</td>
<td>4.6</td>
<td>31</td>
<td>4.9</td>
<td>572</td>
<td>90.2</td>
<td>180</td>
<td>634</td>
</tr>
</tbody>
</table>
As can be seen from the above table, at the end of December 2011, there were 814 brokers out of total 903 on BSE and 1149 brokers out of total 1329 on NSE accounting for 90.1% and 80% were the corporate entities which shows that there are few proprietary firms or family run businesses which are left in the broking space. This reflects the conscious efforts on the part of the Exchanges and regulators to ensure quality broking services in India.

b) Authorised User (AU)

The trading terminals at the brokers end are manned by dealers who are required to be authorized Users / NCFM certified persons. The criteria set for someone to become Authorised User includes minimum age requirement, certification program requirement, not having association with another trading member as Approved User etc.

The trading members are required to appoint only such Authorised Users to operate the trading terminals for the purpose of trading in the derivatives segment on the Exchanges which fulfill the exchange specified criteria.

c) Authorised Person (AP)

For long time there was no concept equivalent to sub-brokers on the Capital Market in the equity derivatives market in India which could be appointed by the brokers to carry out functions of in the derivatives market. Sub-brokers in the capital market are the ones registered with SEBI and affiliated to the brokers to carry out the functions in the equity cash market.

The concept of the Authorized Person was introduced in the derivatives segment so that members could expand their business and they could reach large number of investors through the Authorised

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>8.5</th>
<th>35</th>
<th>674</th>
<th>90.7</th>
<th>260</th>
<th>743</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>22</td>
<td>8.5</td>
<td>35</td>
<td>234</td>
<td>90.0</td>
<td>33</td>
<td>4.4</td>
</tr>
<tr>
<td>2005-06</td>
<td>25</td>
<td>8.9</td>
<td>35</td>
<td>35</td>
<td>3.9</td>
<td>37</td>
<td>4.1</td>
</tr>
<tr>
<td>2006-07</td>
<td>28</td>
<td>8.4</td>
<td>35</td>
<td>252</td>
<td>90.4</td>
<td>35</td>
<td>3.4</td>
</tr>
<tr>
<td>2007-08</td>
<td>34</td>
<td>7.9</td>
<td>35</td>
<td>392</td>
<td>91.0</td>
<td>41</td>
<td>3.6</td>
</tr>
<tr>
<td>2008-09</td>
<td>34</td>
<td>7.4</td>
<td>35</td>
<td>419</td>
<td>91.5</td>
<td>58</td>
<td>4.4</td>
</tr>
<tr>
<td>2009-10</td>
<td>34</td>
<td>7.2</td>
<td>35</td>
<td>435</td>
<td>91.8</td>
<td>67</td>
<td>4.7</td>
</tr>
<tr>
<td>2010-11</td>
<td>65</td>
<td>8.2</td>
<td>35</td>
<td>721</td>
<td>91.2</td>
<td>74</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Source: Compiled from SEBI
Person’s network. Trading Members of the Exchanges are permitted to appoint Authorized Persons (AP) in derivatives segment with the approval of the Exchanges after satisfying the eligibility criteria laid down by the Exchanges and SEBI from time to time. In case of Authorised Persons, the clients introduced by Authorized Person have a direct relationship with trading member, i.e. the member-constituent agreement, know your client forms, risk disclosure document, etc. are executed between the client and the trading member directly. The Authorized Person does not have any trading relationship with the clients directly except for introducing them to the members. Thus, an authorized person is a person who is engaged by a member primarily to solicit commission business in equity derivatives market. The trading terminals can also be extended by trading members at the locations of authorized persons who can accept and place orders from clients on exchange trading platform through trading terminals of the trading members.

**d) Custodial Participant Deals**

Clearing Corporation provides a facility to entities like FIIs, Mutual Funds, NRIs, Domestic Body Corporates and Domestic Financial Institutions etc. to execute trades through any TM, which may be cleared and settled by their own Clearing Member. In order to avail this facility, the entities are required to take a Custodian Participant (CP) Code from the Clearing Corporation through clearing member. The client and clearing member are required to enter into an agreement for the same. The Clearing member requests the Clearing Corporation to allot a CP code to clients for whom the member would be carrying out clearing and settlement. CM provides details of such clients in a specified format of the exchanges.

Thereafter, all trades executed by such CP through any TM are required to have the CP code in the relevant field on the F&O trading system at the time of order entry. Such trades executed on behalf of CP are required to be confirmed by their CM (and not the CM of the TM through whom the trade was executed), within the time specified by the Exchange, using the confirmation facility provided by Clearing Corporation to the CMs in the F&O segment.
Till such time the trade is confirmed by CM of the CP, the same is considered as a trade of TM and the responsibility of settlement of such trade vests with the CM of the TM. Once the trades have been confirmed by CM of the CP, they form part of the obligations of CM of the CP and they are responsible for all obligations arising out of such trades including payment of margins and settlement of obligations.

FII/ sub accounts of FII/MF/Scheme of MF which have been allotted a unique CP code by the Clearing Corporation are only permitted to trade on the Exchange.

4.5.3 Clearing Corporation/House

The clearing corporation/house is responsible for the post-trade activities, such as risk management and the clearing and settlement of trades executed on stock exchanges. The National Securities Clearing Corporation Limited (NSCCL), a wholly owned subsidiary of the NSE, was incorporated in August 1995. NSCCL was the first clearing corporation established in the country and was also the first clearing corporation in the country to introduce settlement guarantee. NSCCL was set up with an objective of bringing and sustaining confidence in the clearing and settlement of securities, promoting and maintaining short and consistent settlement cycles, providing counterparty risk guarantee, and operating a tight risk containment system.

On the similar lines, Bank of India Shareholding Limited (BOISL), a joint venture between BSE and Bank of India, was Clearing House established in 1989 to manage clearing and settlement activity of BSE. BOISL continued to act as a Clearing House of BSE for clearing and settlement activity of the equity derivatives segment. BSE also provided the guarantee of settlements through its Settlement Guarantee Fund (SGF) established under the guidelines of SEBI.

BSE promoted Indian Clearing Corporation Limited ("ICCL") as its 100% owned subsidiary company in December 2009 to function as a Clearing Corporation. Initially ICCL used to undertake clearing and settlement services for the Mutual Funds Segment and Corporate Debt Segment of BSE. ICCL also undertook clearing & settlement functions of the Currency Derivatives Segment of United Stock Exchange of India Limited
Further, since February 25, 2012, ICCL has also started clearing and settling for the obligations of equity derivatives segment of BSE.

4.5.4 Custodians:

Custodians are registered with SEBI under the Securities and Exchange Board of India (Custodian of Securities) Regulations, 1996. For the Exchanges, custodians are clearing members but not trading members. They settle trades on behalf of the trading members and its clients, when a particular trade is assigned to them for settlement. The custodians are required to confirm whether they are going to settle a particular trade for the TMs/Clients or not. If they confirm to settle that trade, the clearing corporation assigns that particular obligation to them. The details of Custodians registered with SEBI as on December 31, 2011 are as follows:

**Table 4.11**

**Custodians in Equity Derivatives Segment**

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Name of Custodian</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Royal Bank Of Scotland N.V. (Formerly ABN Amro Bank N.V.)</td>
</tr>
<tr>
<td>2</td>
<td>Axis Bank Limited</td>
</tr>
<tr>
<td>3</td>
<td>BNP Paribas</td>
</tr>
<tr>
<td>4</td>
<td>Citibank N. A.</td>
</tr>
<tr>
<td>5</td>
<td>DBS Bank Ltd. India</td>
</tr>
<tr>
<td>6</td>
<td>Deutsche Bank AG</td>
</tr>
<tr>
<td>7</td>
<td>Edelweiss Custodial Services Limited</td>
</tr>
<tr>
<td>8</td>
<td>HDFC Bank Ltd.</td>
</tr>
<tr>
<td>9</td>
<td>Hongkong and Shanghai Banking Corporation Limited</td>
</tr>
<tr>
<td>10</td>
<td>ICICI Bank Limited.</td>
</tr>
<tr>
<td>11</td>
<td>IL&amp;FS Securities Services Ltd.</td>
</tr>
<tr>
<td>12</td>
<td>JPMorgan Chase Bank, N.A.</td>
</tr>
<tr>
<td>13</td>
<td>Kotak Mahindra Bank Limited</td>
</tr>
<tr>
<td>14</td>
<td>Orbis Financial Corporation Ltd.</td>
</tr>
<tr>
<td>15</td>
<td>SBI-SG Global Securities Services Pvt. Ltd (Formerly SBI Custodial Services Pvt. Ltd.)</td>
</tr>
<tr>
<td>16</td>
<td>Standard Chartered Bank</td>
</tr>
<tr>
<td>17</td>
<td>State Bank of India</td>
</tr>
<tr>
<td>18</td>
<td>Stock Holding Corporation of India Limited</td>
</tr>
<tr>
<td>19</td>
<td>The Bank of Nova Scotia (Only for Gold and Gold related instrument)</td>
</tr>
<tr>
<td>20</td>
<td>India Infoline Ltd.</td>
</tr>
<tr>
<td>21</td>
<td>DSP Merrill Lynch Limited*</td>
</tr>
<tr>
<td>22</td>
<td>MF Global Sify Securities India Pvt. Ltd*.</td>
</tr>
<tr>
<td>23</td>
<td>Globe Capital market Ltd.</td>
</tr>
</tbody>
</table>

* Application withdrawn for registration as Custodian of Securities

Source: Compiled from SEBI
As can be seen from above table, there are only 23 Custodians registered with SEBI and most of which are banks or subsidiaries/associates of banks. The custodians are must for settlement and clearing in the equity cash segment for FIIs and sub-accounts. However, in the equity derivatives segment FIIs and sub-accounts can clear and settle their trades through Clearing Members. Hence, there is not much requirement felt for the custodians in the equity derivatives segment.

4.5.5 Clearing Banks

Clearing banks are a key link between the clearing members and the clearing corporation/house in the settlement of funds. Every clearing member/self clearing member/professional 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 the case of a pay-out.

As per the records available for NSE, NSCCL has empanelled 13 clearing banks which are namely:

- Axis Bank Ltd
- Canara Bank Ltd
- HDFC Bank Ltd
- ICICI Bank Ltd
- IndusInd Bank Ltd
- Standard Chartered Bank
- Union Bank of India

Also as per the records available for BSE, there are 19 Clearing Banks empanelled by ICCL for the clearing and settlement activity which are namely:

- Axis Bank Limited
- Bank of India Limited
- CitiBank
- Dhanalaxmi Bank Limited
- HSBC Bank Limited
- IDBI Bank Limited
- Kotak Mahindra Bank Limited
- Punjab National Bank
- State Bank of India Ltd
- Yes Bank Limited
- Bank of Baroda
- Canara Bank
- Corporation Bank Limited
- HDFC Bank Limited
- ICICI Bank
- IndusInd Bank Limited
- Oriental Bank of Commerce Limited
- Standard Chartered Bank
- Union Bank of India
Every Clearing Member is required to maintain and operate clearing account with any of the empanelled clearing banks at the designated clearing bank branches. The clearing accounts are used exclusively for clearing & settlement operations i.e. for settling funds and other obligations to Clearing Corporation including payments of margins, collaterals, penal charges and any other payments to the Exchanges. A Clearing member who has funds obligation are required to ensure that sufficient clear balance is available in the clearing account on or before stipulated time on stipulated funds pay-in day.

The clearing members can also maintain and operate additional clearing accounts exclusively for the purpose of enhancement of collaterals. Clearing Members are required to authorize the Clearing Bank to access their clearing accounts for debiting and crediting their accounts, reporting of balances and other information as may be required by NSCCL/ICCL from time to time. The Clearing Bank debits/credits the clearing accounts of clearing members as per instructions received from the Clearing Corporation as per the obligations / collateral requirement / margin requirement/other dues.

4.5.6 Depositories

Depositories are registered with SEBI under Depositories Act, 1996. There are two depositories in India, National Securities Depository Ltd. (NSDL) and Central Depository Services (India) Ltd. (CDSL) which were established under the Depositories Act for the purpose of facilitating dematerialization of securities and assisting in trading of securities in demat form. In equity segment, a depository holds the securities in a dematerialized form for investors in their beneficiary accounts. In the equity segment, each clearing member is required to maintain a clearing pool account with depositories and has to make available required securities in the designated account on settlement day. Depositories run an electronic file to transfer the securities from accounts of custodians/clearing member to that of the Clearing Corporations (and vice versa) as per the schedule of allocation of securities in equity segment of the exchange. In case of the equity derivatives, securities are held towards
margin and/or collateral in the designated accounts by trading / clearing / self clearing/professional clearing members opened for this purpose.

4.5.7 Depository Participants

The Depository provides services to investors through their agents called as Depository Participants (DPs). The DPs are appointed by the Depository with approval of SEBI and are registered as Participants under subsection (1A) of section 12 of the Securities and Exchange Board of India Act, 1992 (15 of 1992). As per regulations in India, a depository enters into an agreement with one or more participants as its agent. Further, any person availing services of Depository enters into an agreement through a participant in the form specified under the bye-laws, rules and regulations governing the same.

There are mainly three categories of entities, i.e. Banks, Financial Institutions and SEBI registered trading members, which can become DPs. The DPs provide various services such as custodial facility, dematerialization, transmission, transactional services including giving effect to buying, selling, transfer of shares etc. The trading members, clients and other market participants use services of DPs in equity derivatives segment for the purpose of holding the securities with them towards margin and/or collateral requirement.

4.6 Trading, Clearing and Settlement System/Process

The futures and options trading system of the NSE is called NEAT-F&O trading system and that of BSE is called BOLT system which provides fully automated, screen-based, anonymous order driven trading platform for derivatives trading on a nationwide basis. These systems also provide an online monitoring and surveillance mechanism.

The trading platforms can be built by trading member themselves to connect with the Exchange’s trading system with the approvals of exchanges or the same are also available through approved vendors of the exchanges.

The Exchanges offer a facility to its trading members by which brokers can use their own trading front-end software in order to trade on the trading system of the Exchanges. On NSE this facility is called as Computer-to-Computer Link (CTCL) facility which is available only to trading members of
NSE and on BSE this facility is called as Intermediate Message Layer (IML) which is the interface between Central Trading Engine of the Exchange and trading members of BSE.

The CTCL and IML facilities can be used by the trading members using their own software running on any suitable hardware/software platform of their choice. Brokers can use CTCL and IML software which can be customized to meet their special needs like provision of on-line trade analysis, risk management tools, integration of back-office operations etc. The members can extend such CTCL and IML terminals remotely through broker's own private network at the various locations.

The trading in futures and options contracts takes place in an anonymous, order driven, electronic trading system. These computer systems used for the purpose of trading are considered to be fully fault tolerant and with components duplexed. Further, to assure that a single hardware failure does not interrupt system operation, each board in the system is paired, with each board in the pair performing the same function in lock-step. For example, identical processor boards execute the same program concurrently. If one board fails and is removed from service, the remaining board continues operating normally, so the end-users and their programs are not affected. The nation-wide trading connectivity is made available through the high available VSAT network which guarantees the uptime of 99.9999%. The leased line connectivity is also offered as a standby connectivity by the Exchanges. Exchanges have the capacity of servers which are significantly higher compared to the load which is handled by them in derivatives clearing & settlement.

Normally, the capacity of trading system is bifurcated into order handling and trade handling. The exchanges keep on monitoring various parameters such as maximum/minimum number of orders/trades managed per second by the trading system, minimum/maximum time lag for order/trade confirmations to understand the capacity building requirement and also to understand the adequacy of the systems to handle the continuously increasing volumes.

Dr. L.C. Gupta Committee report suggested that the per-half-hour capacity of the computers and the network should be at least 4 to 5 times of the anticipated peak load in any half hour, or of the actual peak load seen in any half-hour during the preceding six months. This further is reviewed from time to time.
on the basis of experience by the Exchanges. With the increase in the algorithmic trading and the high frequency trading, the orders can get generated on occurrence of certain events and hence the exchange system can get flooded with large number of orders at such times thereby clogging the system. Also, typically the Exchanges get large number of orders during the first and last half hour on any trading day. If an unfavorable event happens during these periods and triggers the orders through algorithmic and high frequency trades, the exchange system would get flooded with large number of orders. Hence, the exchanges emphasize more on the robust trading system during today’s tech savvy world.

4.6.1 Trading Terminals

The trading terminals in the equity derivatives market are granted only in the main/branch offices of the trading member for their operations or at the offices of Authorized Persons or as Direct Market Access (DMA) terminals to institutions. The trading terminals located at APs locations are deemed to be branch offices of trading member concerned for the purpose of Rules, Byelaws and Regulations of the Exchange. Besides this, in today’s world of technological advancement, the trading activity can be carried out by the clients through broker’s internet facility or mobile trading facility sitting anywhere in nook and corner of the world.

4.6.2 Connectivity

The trading members trade on the exchange trading platform through a satellite network that is owned, operated and managed by the exchanges using VSAT’s (Very Small Aperture Terminals), Leased Lines or internet. The members can avail as many trading terminals as required by them by making payment of requisite charges to the exchanges. However, there is limit set on allotment of number of user ids per connectivity (VSAT/Leased Lines) per segment by the exchanges due to some technical parameters and system constraints.

4.6.3 Mode of Trading

The mode of trading has also evolved over a period of more than a decade with changing time and advent of new technology adopted for the trading. Today, the trading is offered to clients through trading terminals, Direct Market Access platform, co-location, internet based trading and mobile trading by the broker. The trading activity is also now carried
through algorithmic trading by major players for their proprietary and client trading.

The following table shows the mode of trading used during the month of September 2012 on NSE:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particulars</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non-algo trading</td>
<td>54.84</td>
</tr>
<tr>
<td>2</td>
<td>Algorithmic trading</td>
<td>5.49</td>
</tr>
<tr>
<td>3</td>
<td>Direct Market Access platform</td>
<td>8.11</td>
</tr>
<tr>
<td>4</td>
<td>Co-location Trading</td>
<td>21.68</td>
</tr>
<tr>
<td>5</td>
<td>Internet based trading</td>
<td>9.70</td>
</tr>
<tr>
<td>6</td>
<td>Mobile trading</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Source: Compiled from NSE

Note: The above figures have been computed on the basis of gross turnover (for options traded value i.e. premium was considered) and the terminal identification as provided by the trading members at the time of order entry.

As can be seen from the above table, 45% of the trading is happening from the modes other than the traditional modes used earlier i.e. non-algo or trading terminal driven trading. The data reveals that large trading activity is carried out from the co-location. The co-location is a location in the premises of the exchange which is largely used by major clients and brokers to trade on the exchanges largely through algorithmic trading in order to save the order travel time and make the order reach exchange trading system in the fastest way possible since order takes price time priority in the order book of the exchange. The internet based trading activity which is almost 10% is also significant today. The mobile trading is new technology to clients and hence appears to be not being used so significantly which records only 0.18% of the total trading volume during the month of September 2012.

4.6.4 Order Matching Logic and Rules

The Exchange trading systems provides a fully automated trading environment for screen-based, floorless trading on a nationwide basis. The Exchange system also provides an online monitoring and surveillance mechanism. The trading systems of the exchanges support an order driven market and provides complete transparency of trading operations.
The orders received by trading system are first time stamped and then immediately processed for potential match. Brokers can pro-actively enter orders in the system which gets displayed in the system till full quantity is matched by one or more of counter-orders and resulting into trade(s). Alternatively brokers can also put in orders that match with existing orders in the system. The Exchange trading systems attempt to match an active order with a passive order and if a match is not found, then orders are stored in different 'books'. While an active order is an order entering the system, a passive order is one when an order does not find a match and remains in the different books stated above as an outstanding order.

For order matching, best buy order is the one with highest price and best sell order is the one with lowest price. This is since the computer views all buy orders available from point of view of a seller and all sell orders from a point of view of buyers in the market. So, of all buy orders available in the market at any point of time, a seller obviously likes to sell at the highest possible buy price that is offered. Hence, the best buy order is the order with highest price and vice-versa. An order can match partially with another order resulting in multiple trades.

The unmatched orders are stored in price time priority in various books in the sequence as first the Best Price and within the Price by time priority. An active buy order matches with best passive sell order if the passive sell order is less than or equal to the price of active buy order. Conversely, an active sell order matches with the best passive buy order if the price of passive buy order is greater than or equal to the price of active sell order. The best buy order matches with the best sell order. The trade takes place at the passive order price.

On BSE, the Order Matching takes place after order acceptance wherein the system searches for an opposite matching order. If a match is found, a trade is generated. The order against which the trade has been generated is removed from the system. In case the order is not exhausted, further matching orders are searched for till the order gets exhausted or no more match-able orders are found. If the order is not entirely exhausted, system retains the order in pending order book. Matching of orders is in
the priority of price and timestamp. A unique trade-id is generated for each trade and the entire information of the trade is sent to the relevant brokers.

**4.6.5 Order Attributes**

The Exchange trading systems are robust and provide flexibility to users in terms of the kind of orders that can be placed on the trading system of Exchanges. The same also gets reflected through the current broker level trading system extended by the empanelled vendors. The equity derivatives market is order driven i.e. the traders can place only orders in the system. Following are the order types allowed for the derivative products. The orders can be placed by the clients/members broadly based on two conditions which can be classified as time related conditions and price related conditions.

The following types of orders based on **attribute of price related conditions** are allowed by the Exchanges:

- **Limit Price/Order:** This is a type of order that allows price to be specified while entering order into the system. The Users can specify the quantity, price and client code.

- **Market Price/Order:** This is a type of order that allows buying or selling securities at the best price obtainable at the time of entering order. The Users can specify the quantity and client code executable at market price.

- **Stop Loss Price/Order:** Under Stop loss orders, a dealer can specify the threshold price at which the order should get triggered/ activated in the market. Until the trigger price is reached, the order does not participate in matching and order cannot get traded. Such orders are released to the regular lot order book only when last traded price for that contract reaches or surpasses/falls the trigger Price. A sell order in the Stop Loss book gets triggered when last traded price in the normal market reaches or falls below the trigger price of order. A buy order in the Stop Loss book gets triggered when the last traded price in normal market reaches or exceeds the trigger price of order.

The following types of orders based on **attribute of time related conditions** are allowed by the Exchanges:
Day order: Day orders are the orders which are valid for the trading day on which it is entered. Day orders that are not matched on the trading day get cancelled automatically at the end of the trading day.

IOC–Immediate or Cancel: IOC orders are such orders which are valid for present time only when the order is placed in the system and if not matched at that time, they are automatically cancelled. These orders allow clients/members to buy or sell a security as soon as order is released into the market, failing which the order gets removed from the market. In this type of orders, partial match is possible and unmatched portion of the order is cancelled immediately.

All orders have the following attributes:

- Order Type (Limit / Market PF/Market PC/ Stop Loss)
- Asset Code, Product Type, Maturity, Call/Put and Strike Price
- Buy/Sell Indicator
- Order Quantity
- Price
- Client Type (Proprietary / Institutional / Normal)
- Client Code
- Order Retention Type (GFD / GTD / GTC) Good For Day (GFD) - The lifetime of this order is the trading session; Good Till Date (GTD) - The life of the order is till the number of days as specified by Order Retention Period; Good Till Cancelled (GTC) - The order if not traded remains in the system till it is cancelled or the series expires, whichever is earlier.
- Order Retention Period (in calendar days): This field is enabled only if value of the previous attribute is GTD. It specifies number of days the order is to be retained.
- Protection Points: This is a field relevant in Market Orders and Stop Loss orders. The value enterable is in absolute underlying points and specifies the band from the touchline price or the trigger price within which the market order or the stop loss order respectively can be traded.

For the purpose of managing the risk at the member’s level, the exchange also has orders which are Risk Reducing Orders. These are the orders, when broker’s collateral falls below 50 lacs, he is allowed to put
only risk reducing orders and not allowed to take any fresh positions. It is not essentially a type of order but a mode into which the broker is put into by the exchanges when he violates his collateral limit. A broker who has entered the risk-reducing mode is allowed to put only one risk reducing order at a time.

It may be noted that the order priority changes whenever there are changes made in quantity or price in the already placed order.

4.6.6 Trade Management

Trade Rectification or Unique Client Code (UCC) modification is allowed on trades in the respective individual futures instruments. However, UCC modifications are not allowed on the trade on the calendar spread. However, after observing large number of client code modifications in the market carried out by the brokers, SEBI had specified that only genuine client code modification should be allowed by the exchanges. SEBI has also specified detrimental penalty structure applicable since August 2011 for any non-institutional client code modification other than those transferred into the error client code of the broker.

The Exchange also allows online trade give-up/take-up process in the derivatives segment for trades in the individual futures instruments but the same is not allowed for the trades in the calendar spread.

Trades are added to the market statistics and get reflected in trade data indicators in Market watch and Market Picture views such as Last Traded Price, Open Price, High Price, Low Price, Close Price, Number of trades, Trade Volume and Open Interest of the respective futures instruments.

4.6.7 Market Timings

SEBI has given a broad guideline on the trading hours for equity derivatives trading for the exchanges which should be between 9 AM and 5 PM. The Exchange can decide time between the time specified by SEBI subject to the condition that the exchanges has in place risk management system and infrastructure commensurate to the trading hours. Accordingly, trading on the derivatives segment takes place on all days of the week (except Saturdays and Sundays and holidays declared by the Exchanges in advance). The trading days for both the exchanges are synchronized and at no point one Exchange functions and other has a
trading holiday. The market timings of the equity derivatives segment are as follows:

- Normal market / Exercise market open time: 09:15 hrs
- Normal market close time: 15:30 hrs
- Setup cutoff time for Position limit/Collateral value: 16:15hrs
- Trade modification / Exercise market end time: 16:15hrs

The activities performed under normal market are mainly Order entry, Order modification, Order cancellation, inquiry of market information, Approval/Rejection of trades (By Clearing Members for Participant trades), Trade Modification and Trade cancellation request. In the Exercise Market, the activities performed during this session are mainly Exercise of Options contracts, Market inquiry, Approval/Rejection of Trades and Trade cancellation request.

### 4.6.8 Trading Availability

The trading on the Exchange derivatives platform can take place between 09:15 Hrs to 15:30 Hrs. Orders on the derivatives trading platform are not allowed in the pre-open session (9:00am - 9:15am), closing session (3:30pm-3:40pm) & post-closing session (3:40pm–4:00pm).

During the period of suspension of brokers in the Equity Derivatives segment, the orders are not allowed from any of the broker’s terminals.

Further, when the members are in Risk Reducing Mode (RRM) in Derivatives segment, the orders are not allowed for a broker. Brokers are allowed to use calendar spread facility only when the broker is out of RRM. Moreover, in case of any open positions, the brokers are able to put square up orders in individual future legs. Also, the Orders in calendar spread are not allowed on maturity/ expiry of the futures instrument.

### 4.6.9 Price Bands

There are minimum and maximum price ranges applicable in the derivatives segment. However, in order to prevent erroneous order entry, dummy operating ranges and day minimum/maximum ranges are as follows:

- For Index Futures: at 10% of the base price
- For Futures on Individual Securities: at 20% of the base price
For Index and Stock Options: A contract specific price range based on its delta value is computed and updated on a daily basis.

In view of the above, any orders placed at prices which are beyond the operating ranges reaches the Exchanges as a price freeze order. Besides the above, the Exchanges have also advised the trading members to put in place the system and review and define the following limits:

- Quantity limit for each order
- Value limit for each order
- User value limit for each user ID
- Branch value limit for each branch ID
- Spread order Quantity and Value Limit

In addition to the above requirements, the brokers are required to ensure that limits are setup after assessing the risks of corresponding user ID and branch ID, the limits are setup after taking into account the broker’s capital adequacy requirements, all the limits are reviewed regularly and the limits in the system are up to date. The members are also required to ensure that all the branches or users have got limits as defined by them and no user or branch in the system is having unlimited limits on the above stated parameters.

Further, no price bands are prescribed in the Cash Segment for stocks on which Futures & Options contracts are available for trading. Also, for those stocks which do not have Futures & Options Contracts available on them but are forming part of the index on which Futures & Options contracts are available, no price bands are attracted provided the daily average trading on such indices in the F & O Segment is not less than 20 contracts and traded on not less than 10 days in the preceding month.

4.6.10 Exchange Transaction Fees

As mentioned earlier, there are only two derivatives exchanges in India viz. BSE and NSE. The transaction fees levied by both these exchanges are as follows for equity derivatives trading carried out on their platforms:
Table 4.13

Transaction Charges involved in trading in Equity Derivatives

<table>
<thead>
<tr>
<th>Name of the Charges</th>
<th>Rate %</th>
<th>Levied on</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BSE Derivatives Charges</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Tax</td>
<td>12.36</td>
<td>Brkg + Tran.Chgs</td>
</tr>
<tr>
<td>Stamp Duty (In case of option on premium turnover value)</td>
<td>.002%</td>
<td>On Premium</td>
</tr>
<tr>
<td>Transaction Charges (Future)</td>
<td>.0005%</td>
<td>On turnover</td>
</tr>
<tr>
<td>Transaction Charges (Option) on Premium Turnover</td>
<td>.0005%</td>
<td>On turnover</td>
</tr>
<tr>
<td>STT on Sale of an option in securities on premium price</td>
<td>.017%</td>
<td>Sale Side</td>
</tr>
<tr>
<td>STT Sale of an option in securities, where option is exercised on settlement price</td>
<td>.125%</td>
<td>Purchase only</td>
</tr>
<tr>
<td>STT on Sale of a futures in securities</td>
<td>.017%</td>
<td>Sale only</td>
</tr>
<tr>
<td><strong>NSE Derivatives Charges</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Tax</td>
<td>12.36</td>
<td>Brkg + Tran.Chgs</td>
</tr>
<tr>
<td>Stamp Duty ( In case of option on premium turnover value)</td>
<td>0.002</td>
<td>Turn Over</td>
</tr>
<tr>
<td>Transaction Charges (Future)</td>
<td>0.0022</td>
<td>Turn Over</td>
</tr>
<tr>
<td>Transaction Charges (Option) on Premium Turnover</td>
<td>0.053</td>
<td>Turn Over</td>
</tr>
<tr>
<td>STT on Sale of an option in securities on premium price</td>
<td>0.017</td>
<td>Sale only</td>
</tr>
<tr>
<td>STT Sale of an option in securities, where option is exercised on settlement price</td>
<td>0.125</td>
<td>Purchase only</td>
</tr>
<tr>
<td>STT on Sale of a futures in securities</td>
<td>0.017</td>
<td>Sale only</td>
</tr>
</tbody>
</table>

Source: Compiled from BSE and NSE

The above table gives the break-up of the transaction charges levied by both the Exchanges. As can be seen from the above, Transaction Charges (Future) and Transaction Charges (Option) on Premium Turnover charged by BSE are far lesser than that of NSE. However, when we look at the volume traded on the exchanges, NSE still accounts for large volume despite the fact that the transaction charges of NSE are higher than that of BSE.

4.6.11 STT Computation

One of the components of the transaction charges is also the Securities Transaction Tax (STT). As per the Finance Act 2004, and
modified by Finance Act 2008 (18 of 2008) STT rates applicable on the
transactions executed on the Exchange in 2012 are as under:

**Table 4.14**

Securities Transaction Tax (STT) involved in trading in Equity Derivatives

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Taxable securities transaction</th>
<th>Rate Applicable in 2012</th>
<th>Payable by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sale of an option in securities</td>
<td>0.017 per cent</td>
<td>Seller</td>
</tr>
<tr>
<td>2</td>
<td>Sale of an option in securities, where option is exercised</td>
<td>0.125 per cent</td>
<td>Purchaser</td>
</tr>
<tr>
<td>3</td>
<td>Sale of a futures in securities</td>
<td>0.017 per cent</td>
<td>Seller</td>
</tr>
</tbody>
</table>

*Source: Compiled from Finance Act, 2008*

In the above table, in case of sale of an option in securities, the value of taxable securities transaction relating to an "option in securities" is the option premium. In case of sale of an option in securities where option is exercised, the value of taxable securities transaction relating to an "option in securities" is the settlement price.

“The Exchanges adopt the following procedure in respect of the calculation and collection of STT from the brokers:

- STT is applicable on all sell transactions for both futures and option contracts.
- For the purpose of STT, each futures trade is valued at the actual traded price and option trade is valued at premium. On this value, the STT rate as prescribe is applied to determine the STT liability. In case of final exercise of an option contract, STT is levied on settlement price on the day of exercise if the option contract is in the money.
- STT payable by the clearing member is the sum total of STT payable by all trading members clearing under him. The trading member's liability is the aggregate STT liability of clients trading through him.”

The Exchanges provide report to brokers at the end of the day. The report contains information about total STT liability, trading member wise STT liability, client wise STT liability and also detailed computations for determining the client wise STT liability. The members pass on these to clients and are shown separately in the contract notes issued by them to clients.
4.6.12 Brokerage

SEBI and the Exchanges have given broader guidelines on the brokerage rates that can be charged by brokers to its clients. These are as stated below:

i. **Futures Transactions** –

   A member can charge brokerage to the clients on the value of transaction. However, as per Exchange/SEBI stipulations the brokerage charged cannot be more than 2.5% of the contract value exclusive of statutory levies.

ii. **Options Transactions** –

   A member can charge brokerage to the clients on the value of premium for the options transactions. However, as per Exchange/SEBI stipulation the brokerage charged cannot exceed 2.5% of the premium amount or Rs. 100/- per lot whichever is higher.

In the equity derivatives market, brokers have adopted various brokerage rates for their clients trading in the derivatives segment. Largely, it was observed that the brokerage rates charged by brokers are based on type of client whether FII, Sub-Account, Mutual Fund, Financial Institution, High Net-worth Individual (HNI) or retail client. This normally differs based on the trading volume of these clients carried out through those broking firms. As a marker practice, brokers also give concessional brokerage rates based on the advanced brokerage paid by the clients to them.

4.6.13 Contract Notes:

A broker is required to issue a contract note to clients for all transactions in the format specified by exchanges. Contract Note is a note sent by a broker to his client/constituent recording the trade(s) of share/derivatives on the recognized stock exchanges such as NSE and BSE done on a particular day for and on behalf of the client/constituent. A contract note is issued in the format and manner prescribed by the Exchanges and it establishes a legally enforceable relationship between the trading member and client/constituent in respect of trades executed on the exchange as mentioned in the Contract Note. The contract notes are required to be stamped as per the Indian Stamp Act/ relevant Stamp
Act and that it is responsibility of the Trading Member to pay the applicable stamp duty to the concerned Government Department.

4.6.14 Know Your Client (KYC):

SEBI has stipulated from time to time the KYC requirements to be adhered to by brokers while accepting/registering clients with them. “SEBI, for the first time, vide its circular dated August 26, 2004 specified requirement of the KYC in order to bring about uniformity in documentary requirements across different segments and exchanges and also to avoid duplication and multiplicity of documents. The following set of uniform documents was stipulated by SEBI for equity derivatives clients:

1. Client Registration Form
2. Member Clients Agreement
3. Uniform Risk Disclosure Documents”

However, over a period of time the brokers started obtaining lot of other documents signed from clients in order to cover other trading related and operational aspects for ease to the clients and the brokers in trading, clearing and settlement of the transactions of the clients. The additional documents also included clauses and authorizations to safeguard brokers from any litigation and grievances in every manner possible from the clients. The KYC documents grew in number of pages due to this additional need of taking documents at the same time increasing number of signatures in the KYC booklet.

In order to review this increased requirement and with a view to instill greater transparency and discipline in the dealings between the clients and the stock brokers these requirements underwent change in December 2009 making KYC requirement more stringent and keeping in mind the basic objective of protecting the investor’s interests requiring the brokers to provide KYC booklet containing mandatory and non-mandatory documents separately and making a copy of the same available to the client. It was specified by SEBI that the running account authorization, authorization for Electronic Contract Notes and any other authorizations should be taken by the broker separately from the clients. “The KYC requirement was further reviewed on August 22, 2011, simplifying and rationalizing the Trading Account Opening Process. SEBI specified that
the document stating the Rights & Obligations of stock broker, sub-broker and client for trading on exchanges, Uniform Risk Disclosure Documents, Guidance Note detailing Do’s and Don’ts for trading on exchanges, Tariff sheet, Company information etc also should form part of the KYC booklet. Some of these were in the form of agreement earlier was done away with by SEBI in the new stipulation."

SEBI further took a step towards reducing the burden of clients in filling multiple KYC forms and sharing the same information again and again with every broker wherever client wished to trade. If a client intended to open accounts with different intermediaries for the purpose of trading / investment in the securities market, client had to undergo a process of Know Your Client (KYC) again and again. Therefore, to avoid duplication of KYC process with every intermediary, a mechanism for centralization of the KYC records in the securities market is developed. An intermediary performs initial KYC of its clients and uploads the details on the system of KYC Registration Agency (KRA). These KRAs are registered with SEBI. When a client approaches another intermediary, the intermediary can verify and download the client’s details from the system of KRA. As a result, once a client has done KYC with a SEBI registered intermediary, the client need not undergo the same process again with another intermediary. Accordingly, SEBI has formulated the KYC Registration Agency (KRA) Regulations which cover the registration of KRAs, functions and responsibilities of the KRAs and intermediaries, code of conduct, data security, etc.

4.7 Clearing & Settlement Mechanism adopted by Exchanges

National Securities Clearing Corporation Limited (NSCCL) for NSE and International Indian Clearing Corporation Limited (ICCL) for BSE are the clearing and settlement agencies for all the deals executed in the equity derivatives segment on respective stock exchanges. These Clearing Corporations act as a legal counter-party for all deals on the respective exchange’s derivatives segment and guarantees settlement.
A Clearing Member (CM) has the responsibility of clearing and settlement of all deals executed by self and Trading Members (TM) and/or Custodial Participants associated with it on the respective stock exchanges, who clear and settle such deals through them.

There are following broad measures adopted and activities carried out by the Clearing Corporations to ensure smooth clearing and settlement in the derivatives segment of the exchanges:
1 Activities by Clearing Members and Clearing Banks
2 Clearing Mechanism
3 Settlement Schedule
4 Settlement Price
5 Settlement Mechanism
6 Data & Reports Provided to Members
7 Penalty Provisions
8 Corporate Action Adjustment
9 Custodial Participant Deals

4.7.1 Activities by Clearing Members and Clearing Banks

Clearing Members (CMs) have the responsibility of clearing and settlement of all deals executed by self and Trading Members (TMs) and/or Custodial Participants (CPs), who clear and settle such deals through them. Primarily, the CM performs the following functions:

a. Clearing - Computing obligations of all his TM's i.e. determining positions to settle.
b. Settlement - Performing actual settlement.
c. Risk Management - Setting position limits based on upfront deposits / margins for each TM and monitoring positions on a continuous basis.

There are three types of Clearing Members as discussed earlier viz. Trading & Clearing Member (TCM), Professional Clearing Member (PCM) and Trading & Self Clearing Member (STCM).

As discussed earlier in detail, primary role of the Clearing Bank is to facilitate clearing and settlement of trades through the banking channel. As stated earlier, NSCCL has empanelled 13 clearing banks where as ICCL has empanelled 19 clearing banks for this purpose.

As mentioned earlier, every Clearing Member is required to maintain and operate a primary clearing account with any one of the
empanelled clearing banks at the designated clearing bank branches. The primary clearing account is used exclusively for clearing operations i.e., for settling funds and other obligations to Clearing Corporation including payments of margins, penal charges and other payments to the exchanges. Clearing Members are required to ensure availability of sufficient clear balance to meet their funds obligation.

Further, every clearing member can maintain and operate additional clearing accounts exclusively for the purpose of enhancement of collaterals. All the credits and debits other than collateral enhancement specified by the member are routed through the primary clearing account. Clearing members also cannot close or de-activate these clearing accounts without prior written consent of Clearing Corporations.

4.7.2 Clearing Mechanism

A Clearing Member's open position is arrived by aggregating open positions of all the Trading Members (TM) and all custodial participants clearing through it. A TM's open position in turn includes TM’s proprietary open position and clients’ open positions.

a. Proprietary / Clients’ Open Position: While entering orders on the trading system, TMs are required to identify orders as proprietary (if they are own trades) or client (if entered on behalf of clients) through 'Pro / Cli' indicator provided in the order entry screen. The proprietary positions are calculated on net basis (buy - sell) and client positions are calculated on gross of net positions of each client i.e., a buy trade is off-set by a sell trade and a sell trade is off-set by a buy trade.

b. Open Position: Open position for the proprietary positions are calculated separately from client position.

4.7.3 Settlement Schedule

The settlement of trades in case of equity derivatives segment is on T+1 working day basis. Brokers with a funds pay-in obligation are required to have clear funds in their primary clearing account on or before 10.30 a.m. on the settlement day. The payout of funds is credited to the primary clearing account of brokers thereafter.
4.7.4 Settlement Price

There are many products offered on derivatives exchanges such as Futures Contracts on Index / Global Index / Individual Stocks and Options Contracts on Index / Global Indices / Individual Securities. There are various settlement prices for them. The same are presented below in the tabular form:

**Table 4.15**
Settlement Prices add Computation Method for Products in Equity Derivatives

<table>
<thead>
<tr>
<th>Product</th>
<th>Settlement</th>
<th>Settlement Price Computation Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Futures Contracts on Index or Global Index</td>
<td>Daily Settlement</td>
<td>Closing price of the futures contracts on the trading day. (closing price for a futures contract is calculated on the basis of the last half an hour weighted average price of such contract)</td>
</tr>
<tr>
<td>or Individual Security</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Un-expired illiquid futures contracts</td>
<td>Daily Settlement</td>
<td>Theoretical Price computed as per formula F = S * e^r</td>
</tr>
<tr>
<td>(including Global Indices)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Futures Contracts on Index or Individual</td>
<td>Final Settlement</td>
<td>Closing price of the relevant underlying index / security in the Capital Market segment of NSE, on the last trading day of the futures contracts</td>
</tr>
<tr>
<td>Securities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Futures Contracts on Global Indices (S&amp;P 500</td>
<td>Final Settlement</td>
<td>Special Opening Quotation (SOQ) of the Global Indices S&amp;P 500</td>
</tr>
<tr>
<td>and DJIA)</td>
<td></td>
<td>and DJIA on the last trading day of the futures contracts</td>
</tr>
<tr>
<td>Options Contracts on Index and Individual</td>
<td>Final Exercise</td>
<td>Closing price of such underlying security (or index) on the last trading day of the options contracts</td>
</tr>
<tr>
<td>Securities</td>
<td>Settlement</td>
<td></td>
</tr>
<tr>
<td>Options Contracts on Global Indices</td>
<td>Final Exercise</td>
<td>Special Opening Quotation (SOQ) of the Global Indices S&amp;P 500</td>
</tr>
<tr>
<td></td>
<td>Settlement</td>
<td>and DJIA on the last trading day of the options contracts</td>
</tr>
</tbody>
</table>

Source: Compiled from NSE and BSE

As can be seen from the above table, there are various settlement prices applicable for various products offered in equity derivatives market by the exchanges. These prices are arrived at based on the settlement price computation methodology suggested in the last column.

4.7.5 Settlement Mechanism

There are two types of settlements that take place in the context of Indian derivatives market. One for the futures contracts on index and individual securities and the other for options contracts on index and individual securities. These settlements have been elaborated below in detail.
a) Settlement of futures contracts on index and individual securities

In the futures contracts on index and individual securities, the settlement takes place as daily Mark-to-Market Settlement and final Settlement. These have been given below:

i. Daily Mark-to-Market Settlement

The positions in futures contracts for each broker are marked-to-market to the daily settlement price of the futures contracts at the end of each trade day.

The profits/losses are computed as the difference between the trade price or the previous day's settlement price and the current day's settlement price. The CMs who have suffered a loss are required to pay mark-to-market loss amount to Clearing Corporations which is passed on to the brokers who have made a profit. This is known as daily mark-to-market settlement.

Theoretical, daily settlement price for unexpired futures contracts, which are not traded during the last half an hour on a day, is computed as per formula given below:

\[ F = S \times e^{rt} \]

Where:
- \( F \) = theoretical futures price
- \( S \) = value of the underlying index
- \( r \) = rate of interest (MIBOR) or such other rate as specified
- \( t \) = time to expiration

After daily settlement, all open positions are reset to the daily settlement price. CMs are responsible to collect and settle daily mark to market profits/losses incurred by TMs and their clients clearing and settling through them. The pay-in and pay-out of the mark-to-market settlement is on T+1 day (T=Trade day). The mark to market losses or profits are directly debited or credited to the CMs clearing bank account.

Clearing members also have option to pay daily mark to market settlement on T+0 day basis. Clearing members have to mention the option once in a quarter (Jan-March, Apr-June, Jul-Sep & Oct-Dec). The option once exercised remains irrevocable.
during that quarter. Clearing members who opt for payment of
daily MTM settlement amount on a T+0 basis are not levied the
scaled up margins. However, the pay-out of MTM settlement
continues to be done on T+1 day basis.

Clearing members who opt to pay Daily MTM settlement
on a T+0 basis compute the settlement amounts on a daily basis
and make the amount of funds available in their clearing account
before end of the day on T+0 day. Failure to do so is construed as
non-compliance and penalties applicable for fund shortages from
time to time are levied on the clearing members by the exchange.

ii. Final Settlement

On the expiry of the futures contracts, Clearing
Corporations mark all positions of a CM to final settlement price
and resulting profit / loss is settled in cash.

The final settlement of futures contracts is similar to the
daily settlement process except for the method of computation of
final settlement price. The final settlement profit / loss are computed
as difference between trade price or previous day's settlement price
and final settlement price of the relevant futures contract.

Final settlement loss/ profit amount is debited/ credited to
the relevant CMs clearing bank account on T+1 day (T = expiry
day). Open positions in futures contracts cease to exist after their
expiration day.

b) Settlement of options contracts on index and individual securities

In the options contracts on index and individual securities, the
settlement takes place as daily Premium Settlement and Final Exercise
Settlement. These have been given below:

i. Daily Premium Settlement

Premium settlement is cash settled and settlement style is
premium style. The premium payable position and premium
receivable positions are netted across all option contracts for each
CM at client level to determine the net premium payable or
receivable amount at the end of each day. CMs who have a
premium payable position are required to pay the premium amount
to Clearing Corporations which is in turn is passed on to the members who have a premium receivable position. This is known as daily premium settlement.

CMs in turn collect and settle the premium amounts from the TMs and their clients clearing and settling through them. The pay-in and pay-out of the premium settlement is on T+1 day (T=Trade day). The premium payable amount and premium receivable amount are directly debited or credited to the CMs clearing bank account.

ii. Final Exercise Settlement

Final Exercise settlement is carried out for option positions at in-the-money strike prices existing at the close of trading hours on the expiration day of an option contract. Long positions at in-the-money strike prices are automatically assigned to short positions in option contracts with the same series on a random basis.

For index options contracts and options contracts on individual securities, exercise style is European style. Final Exercise is Automatic on expiry of the option contracts. Option contracts which have been exercised are assigned and allocated to Clearing Members at the client level. Exercise settlement is cash settled by debiting/ crediting of clearing accounts of the relevant Clearing Members with respective Clearing Bank.

Final settlement loss/ profit amount for option contracts on Index and option contracts on individual securities is debited/ credited to the relevant CMs clearing bank account on T+1 day (T=expiry day).

Open positions in option contracts cease to exist after their expiration day. The pay-in /pay-out of funds for a CM on a day is the net amount across settlements and all TMs/ clients, in F&O Segment.

4.7.6 Data & Reports Provided to Members and to Clients/Constituents

The Exchanges and Clearing Corporations provide various data and reports for the purpose of carrying out smooth clearing and settlement process. The files provided are positions files, exercise reports, trades reports, contracts reports, bank transaction reports, STT reports,
assignment reports, margin statements, client level margin file, cross margin benefit reports etc. These are normally downloaded after the close of the trading hours.

The brokers in turn communicate these requirements to the Custodial Participants and its clients/constituents through margin reports, contract note, bills and such other modes as deemed fit by the brokers.

4.7.7 Penalty Provisions in Clearing and Settlement

There are many penal charges levied by the Clearing Corporation for violation of various regulatory requirements such as failure to pay funds/ settlement obligations, Overnight settlement shortage of value more than Rs.5 lakhs, Security deposit shortage, Shortage of Capital cushion, Short Reporting of Margins in Client Margin Reporting Files, margin/limit violation, FII/Mutual Fund position limit violation, , Client wise/NRI/sub account of FII/scheme of MF position limit violation, Market wide Position Limit violation etc

These are also debited by the Clearing Corporation from clearing bank account of the brokers. The brokers can further debit these to the Custodial Participants and its clients/constituents due to which these were levied on them depending on the policy and procedures adopted by the respective brokers.
• References:

2. SEBI (2001), Circular - SMDRP/DC/CIR- 7/01, SEBI, Mumbai, P3
3. Ibid, PP3-4
4. SEBI, (2012), Master Circular on Exchange Traded Derivatives, SEBI, Mumbai, P33
5. SEBI, (2012), Master Circular on Exchange Traded Derivatives, Opct, PP33-35
8. SEBI, (2012), Master Circular on Exchange Traded Derivatives, Opct, P105-106
10. BSE (2011-2012), Various Circulars on LEIPS, BSE, Mumbai
11. SEBI, (2012), Master Circular on Exchange Traded Derivatives, Opct, PP103-106
12. SEBI (2012), Circular No SMDRP/DC/CIR-15/02, SEBI, Mumbai, PP1-2
13. NSE (2012), NSCCL (F&O) Regulations, NSE, Mumbai, P16
15. SEBI (1992), SEBI Act 1992, Govt. of India, New Delhi, PP10-21
16. SEBI (2012), Master Circular on Exchange Traded Derivatives, Opct, PP24-28
17. NSE (2012), NSCCL (F&O) Regulations, NSE, Mumbai, PP17-18